Analysis of consumers' preferences for typical local cheese in Albania applying conjoint analysis

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Abstract

This study aims at analysing Albanian consumer preferences for cheese using a structured survey. We focus on preferences for local cheese by grouping consumers into homogenous classes using a conjoint choice design. Research results indicate that the area of origin is an important attribute, though the level of importance varies by consumer class. Two out of the three classes identified show a strong preference for white cheese, and prefer cheese from Gjirokaster area. The analysis provides useful information to producers and policy makers on the potential for developing local geographical indication labels, either Protected Geographical Indication or Protected Designation of Origin. Research results may be particularly promising in the case of Gjirokaster that has a good reputation for cheese production.

Keywords: *Consumer preferences, cheese, conjoint choice experiment, latent class analysis, Albania.*

Résumé

Cette étude vise à analyser les préférences des consommateurs albanais pour le fromage sur la base d'un questionnaire structuré. L'attention est focalisée sur les préférences pour le fromage local typique et l'échantillon de consommateurs est subdivisé en groupes homogènes au moyen d'une analyse conjointe des choix. Les résultats indiquent que la zone d'origine est un attribut important, mais le niveau d'importance varie selon les groupes de consommateurs. Deux des trois groupes identifiés affichent une forte préférence pour le fromage blanc et pour le fromage originaire de Gjirokastër. L'analyse fournit des informations utiles pour les producteurs et les décideurs sur le potentiel de développement des labels d'indication géographique locale, que ce soient des Indications géographiques protégées ou des Appellations d'origine protégée. Ces résultats s'avèrent être particulièrement intéressants dans le cas de Gjirokastër qui a bonne réputation pour la production de fromage.

Mots-clés: Préférences des consommateurs, fromage, analyse conjointe des choix, analyse des classes latentes, Albanie.

Introduction

The livestock sector is the most important agri-food sector in Albania. Most farmers are engaged in the livestock sector, while it represents about ½ of the agriculture output value. Within the livestock sector, dairy production is considered a priority sector by policy-makers in Albania (MARDWA, 2014).

The dairy industry has been stable in the last decade. Despite a slight consolidation of the livestock farming, small-scale subsistence and semi-subsistence husbandry still persist – where the average farm area is approximately 1.3 hectares, most cattle farms have 1-2 cows (ibid). High fragmentation of the milk production base contributes to high production costs and hampers improvement of quality and safety standards. The on-going development of the dairy sector is also driven by consumer preferences, for instance: the sensitivity of consumers towards the origin of the product, the high diversity of products, the growing integration of farms in the market, and the consolidation of the legal and institutional framework.

Albania has a strong tradition in both cattle and small ruminant dairy production. Milk production is dominated by cow milk (87 percent), while the rest is almost equally shared between sheep and goat milk (ibid). Sheep and goat milk is used mainly for cheese production, whereas cow milk is used for (and is the main source of) all types of milk by-products.

Domestic consumption is largely dominated by domestic production of cheese – two main types of cheese are white (feta-like) and kashkaval (hard yellow cheese). Imports, which consist of a wider range of cheese types, cover about 10% of the market (Table 1). Meanwhile, no or very low exports are recorded, due to high dairy production costs, lack of compliance with international safety standards, and gaps in marketing, certification and branding. Thus, the domestic market is and will remain the most important market for the Albanian dairy industry.

Cheese making is the most prominent activity in the Albanian dairy industry. Cheese has been historically one of the main food items of the Albanian household's consumer basket. There has been limited research on consumer preferences for cheese in Albania. In general, Albanian consumers prefer domestic cheese to imported one. According to Imami *et al.,* (2015) consumers have strong preference for cheese from specific regions of Albania such as Gjirokaster.

Despite consumer preferences, local origin branding is practically inexistent in Albania. Due to legal and institutional framework gaps, there has not been certification of geographical indications (GI). One factor contributing to this situation is the limited understanding of consumer preferences and market potential. For example, at the time this

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Table 1 - *Supply balance of cheese (metric tons) during the period 2005-2013.*

Indicators	2005	2009	2010	2011	2012	2013
Production	13,947	12,877	13,527	12,340	12,980	12,480
Export	0	1	0	0	9	3
Import	1,209	1,259	1,167	1,636	1,408	1,188
Export/Import	0.00%	0.08%	0.00%	0.00%	0.64%	0.25%
Apparent Consumption *	15,156	14,135	14,694	13,976	14,379	13,665
Import penetration rate	8.67%	9.78%	8.63%	13.26%	10.85%	9.52%

Source: MoAFCP (2012) for production data, UNSTAT for trade data.
* Production + Import – Export. Stock changes, losses, unaccounted-for product are not considered.

study was implemented, there had been no in- depth consumer segmentation study based on preferences for origin of cheese, including important aspects such as willingness to pay for local origin labelling.

The objective of this study is to assess consumer preferences for typical products in Albania using the case of cheese. This has been the first time that a study on typical products has been undertaken in Albania using a conjoint choice experiment. The study results are expected to inform policy makers and farmers on potential for development of typical products in Albania.

In this paper, we analyse consumer preferences for cheese in Tirana, which is the largest urban area and market in Albania. Eliciting consumer preferences related to the origin of the local cheese is important for informing interested businesses and developing a product quality policy. This research aims to group consumers according to their preferences for the main cheese attributes, assess preferences of each identified class for each of the identified attributes, with particular focus on area of origin/production. Research findings can provide a basis for marketing and policy recommendations for the sector's stakeholders, including producers (dairy processors) and policy-makers, regarding potential of introducing quality schemes similar to those implemented in the European Union, such as Protected Designation of Origin (PDO) or Protected Geographical Indication (PGI). Any investments regarding GI in the future would contribute towards sustainable development of the agricultural sector in Albania and especially in mountainous areas.

Albania is an interesting case study for two reasons: first because it has the characteristics of a Southern European country that, according to Jordana (2000), expands the availability of typical and traditional food products due to a fragmented market and a good climate; second because the country is a Candidate Member for EU accession and the implementation of quality schemes is required as part of the EU regulation framework (Zhllima *et al.*, 2012b).

This paper is organized in five sections. In the following section we review the literature, largely focusing on studies performed in other countries due to scarcity of research on this topic in Albania. The following section describes the methods and procedures. Then we present the results, followed by conclusions and recommendations for producers and policymakers.

1. Literature review

Consumers nowadays are increasingly aware of food safety, quality and authenticity, and show greater willingness to pay (WTP) for products that have these characteristics. Origin within the country, for products that have a reputation linked with that origin, is interpreted as a signal of higher quality.

Consumer studies have argued that consumers opt for products with extrinsic features not only related to the product itself, but also to the know-how required in the process of production and the associated culture and tradition (Pilone *et al.,* 2015). They might prefer these products because factors such as culture, history and heritage, embedded in the tradition and the resources of a certain territory, may be more preferred compared to convenience and appropriateness (Zander and Hamm, 2010).

Scholars classify these broad concepts as credence attributes (Nelson, 1970). The value of such attributes is not easily determined by the consumer, since they are valued under partial information and its perception depends on trust (Anderson and Anderson, 1991). Credence attributes are frequently dealt with in consumer studies focusing on product attributes such as locally grown, safety, organic, etc. Other types of attributes affect consumers' willingness to pay a price premium such as search (e.g. color) and experience (e.g. taste) attributes, which are reliable and verifiable (Parcell and Gedikoglu, 2012).

Due to the broad category of credence features and information asymmetry (Akerlof, 1970) existing in nowadays market, consumer preferences related to credence attributes may be distorted. Therefore, scholars emphasize the role of institutions in mitigating the scarce information and promoting product credence attributes through various signaling approaches such as certification and labeling (Unnevehr *et al.,* 2010). For example, a study of Napolitano *et al.* (2008) proves that quality perception was less different to what expected when external information is provided.

Marketing theories during the recent two decades are intensively searching to value-enhance products by informing consumers on characteristics of the products related to the origin of the products and location as proxies for quality (Dimara *et al.,* 2004). Country of origin or place of origin (both used as variables of origin) are found to represent the emotional ties that consumers reveal cognitively such as affection and norms (Verlegh and Steenkamp, 1999). Country or region-related origin attributes have often been used in the literature (Van der Lans *et al.,* 2001) as extrinsic cues, to test whether they affect choice, preference, and willingness to pay on the basis of attitudes of consumers.

Considering these attributes as well as the development of quality designations, mostly regulated by European Commission regulations such as Protected Designation of Origin (P-

DO), Protected Geographical Indication (PGI) or Traditional Specialty Guaranteed (TSG), since years consumer studies in Europe have studied the influence of labeled geographical origins in the consumer preferences and associated willingness to pay (Pilone *et al.,* 2015). For example, in Portugal, De Souza Monteiro and Ventura Lucas (2001), identified PDO as the most important attribute for the choice of traditional cheeses, followed by price, texture, and unit of sale. Later on Pilone et al. (2015) found that Italian consumers are greatly influenced by PDO or organic certification in choosing traditional type of cheese and that willigness to pay for these attributes was higher due to the potential existence of these labels. Similarly to Italian consumers, a study conducted in Denmark showed that the majority of Danish urban consumers generally prefer Danish-made products to foreign ones, particularly in the case of dairy products produced locally (Cernea, 2011). Furthermore, French consumer preference for Cammebert cheese also converge with other countries findings (see Hassan and Monier-Dilham, 2006).

Country of origin has proven to be an important attribute for consumers in Albania for various food products. Albania has been subject of various studies on consumer preferences for products such as meat, olive oil, table olives, wine, apple and cheese. Most of the studies confirm the strong preference of Albanian consumers toward domestic products (Chan-Halbrendt *et al.,* 2010; Imami *et al.,* 2011; Zhllima *et al.*, 2012a). However, there is a scarcity of literature regarding consumer preferences for origin in terms of specific locations within Albania. Recent studies show that Albanian consumers have preference for food coming from specific Albanian regions, particularly for cheese (Kokthi *et al.* 2014; Imami *et al.,* 2015). In any case, previous segmentation studies show that Albanian consumers show heterogeneous preferences (Imami *et al.*, 2013a; Imami *et al.*, 2013b).

2. Methods and Procedures

We use a conjoint choice design (CCD) to analyse consumer preferences, perform consumer segmentation, and assess preferences for each of the identified consumer classes and the relative importance of Albanian cheese attributes.

Several studies have used conjoint analysis to analyze consumer preferences for cheese (De Souza Monteiro and Ventura Lucas, 2001; Imami *et al.,* 2013b). This approach has been applied also in various studies on consumer preferences for other food products in Albania (see Chan-Halbrendt *et al*., 2010; Imami *et al.,* 2011; Skreli and Imami, 2012).

Table 2 - *Design stages for a CCE.*

Stage	Description
1. Selection of attributes	Selection of apple attributes has been done based on the literature review, expert interview and focus group discussions.
2. Assignments of attributes level	The range of attributes is also based on focus groups, literature review, expert interview and market conditions. The attribute levels have been assigned such as to be reasonable and realistic.
3. Choice of experimental design	Fractional factorial design is used to reduce the possible combinations which combine the levels of the attributes that reduce respondents fatigue and also provide efficiency in model estimation.
4. Construction of choice sets	The concepts identified by the experimental design are then paired and classed into choice sets to be presented to respondents.
5. Data analysis	Latent class analysis has been used to analyse consumer preferences

Source: Chan-Halbrendt et al., 2010.

Conjoint choice design

Conjoint choice design combines conjoint choice experiment with Latent Class Analysis (LCA) to analyse the data collected to group consumers with homogeneous preferences. The choice experiment approach has a theoretical grounding in Lancaster's model of consumer choice (Lancaster, 1966), and an econometric basis in models of random utility (Luce, 1959; McFadden, 1974). Lancaster (1966) developed the theory in which the utility of a product is based on the bundle of attributes it has rather than the good itself.

Using LCA instead of one class aggregated model analysis represents an improvement since with this method it is possible to account for heterogeneity among respondents due to clustered preferences. Earlier applications of the approach assumed homogeneous preferences across respondents, though preferences are in fact heterogeneous. Accounting for heterogeneity enables estimation of unbiased estimates of individual preferences, enhancing the accuracy and reliability of estimates of demand, participation, marginal and total welfare (Greene, 1997).

There are five stages in conjoint choice design, including LCA, to determine Tirana consumer preferences for cheese.

Table 2 gives a brief description of the design stages of a CCE combined with LCA.

Selection of attributes and assignment of attribute levels

Selection of attributes was based on literature review, expert interviews and a focus group with food marketing experts. Various CCE studies on cheese consumer surveys have used various attributes according to the objective of the research. As a result, in this study the chosen attributes and their levels are as follows (Table 3):

Table 3 - *Cheese attributes and their levels.*

Attribute	Levels			
Price (ALL[1]/kg)	400	600	800	1000
Origin	Shkoder	Korce	Gjirokaster	
Type of milk	Cow milk	Goat milk	Sheep milk	
Type of cheese	Yellow cheese	White cheese		

Source: Authors estimations.

Origin within Albania has been selected based on previous research results and experts' assessments. Many authors have considered origin within the country as a main extrinsic attribute for cheese (Souza Monteiro and Ventura Lucas, 2001; Tendero and Bernabéu, 2005; Giraud *et al*., 2013). The most important areas of Albania in terms of tradition in production and consumption are Shkoder (north), Korce (southeast) and Gjirokaster (southwest). Assigned levels of attributes are also in line with Imami *et al.* (2015) and Kokthi *et al.* (2014).

Types of milk. In Albania three types of milk (available in the country) are typically used for cheese production, namely milk from cow, goat and sheep. The selection of type of milk as an attribute is also used at Santoes and Ribeiro (2005).

Types of cheese. In Albania, two types of cheese are most commonly produced and consumed: white (feta-like) cheese and hard matured cheese (yellow, known also as "kashkavall" in Albania).

Price is commonly used in conjoint studies, since it is usually a very important attribute and it is necessary to estimate the willingness to pay. It is expected that the price should negatively be associated with the consumer odds to prefer the product.

Experimental design and construction of choice sets

An orthogonal fractional factorial design was used to identify an efficient set of attribute level combination. This design ensures the absence of multi-collinearity between attributes levels. Twelve choice tasks of triple concepts were included in each questionnaire, and each respondent was asked to choose 12 concepts, one for each triple choice tasks. Sawtooth Software SSI Web v 6.6 was used to design the survey and to prepare the data for processing (refer to Table 4 for an example of choice task).

Table 4 - *Example of Choice Task.*

A	B	C
Cheese Korce	Cheese Shkoder	Cheese Gjirokastre
Goat milk	Sheep milk	Cow milk
White	White	Kackavall (Hard, yellow)
400	600	1000

Latent class analysis

LCA depicts a finite and identifiable number of segments, or groups of individuals, within a set of data. Preferences are relatively homogeneous within segments but differ substantially from one segment to another. The number of segments is determined endogenously by the data. Belonging to a specific segment is probabilistic (meaning that a consumer is not assigned to a specific class, instead for each consumer the probability of belonging to each class is estimated), and depends on respondent's choices and his social, economic, and demographic characteristics. Sawtooth Software Latent Class for CBC v 4.0.8 was used for data processing. In our analysis, we use only respondent's choices of product profiles as determinants of consumers' classification, thus probability of belonging to a cluster (that can be interpreted as class size) only depends on product attributes.

Sampling and data collection

Altogether 210 structured interviews were conducted face-to-face. The interviews were carried out by trained students at various sites within the urban area of Tirana, according to suggestions derived from focus group. Consumers were selected using a market intercept method – people were approached randomly and after completing each face-to-face interview, interviewers would approach the next closest person who walked by. Given the lack of a functional address system in Tirana (Albania) based on which one can draw random sampling, this was the most viable and efficient approach. This poses a limit to the possibility of generalizing; however, as shown by the comparison of sample and Tirana population profile based on gender and age (Table 5), the structure is similar.

3. Results

Basic socio-demographic variables were collected through the questionnaires - namely age and gender – such information is available also for the whole population of Tirana and thereby comparisons are possible as shown in Table 5. Older consumers are slightly over-represented in the sample in comparison to Tirana demographics. This can be attributed to the fact that in many Albanian households shopping is more commonly performed by elders (Imami *et al.,* 2011).

An important decision regards the choice of the number of classes to be estimated. The Consistent Akaike Information Criterion (CAIC) is used to determine the best model – smaller values of CAIC and bigger values of Chi square are preferred (Bozdogan, 1987). We analysed several combinations with several consumer classes, segmenting consu-

Table 5 - *Socio-demographic comparison of survey respondents with Tirana's population*[1],

		Survey Respondents	Tirana Population
		(%)	(%)
Gender	Male	53	49
	Female	47	51
Age	18-34	28	42
	35-54	40	32
	55-64	18	13
	Over 64	14	13

Source: Albanian Institute of Statistics (Census of households and dwellings 2011 data), Available at: http://www.instat.gov.al/

[1] Census of households and dwellings 2011 data, INSTAT.

Table 6 - *Estimated parameters, relative importance of attributes and size of each of the three classes.*

Attributes	Levels	Class 1	Class 2	Class 3
Size/probability (%)		29.1%	22.2%	48.7%
Attribute importance (%)				
Price		64.8%	21.5%	44.2%
Type of milk		2.8%	3.5%	8.4%
Type of cheese		16.0%	11.1%	11.7%
Origin		16.4%	63.9%	35.7%
Estimated parameters				
Price		-1.315**	0.545**	-0.108**
Type of Milk	Cow milk	-0.108	0.005	-0.017
	Goat milk	0.062	-0.137	0.039
	Sheep milk	0.045	0.132	-0.022
Type of Cheese	White cheese	0.488**	0.419**	-0.045
	Yellow hard cheese	-0.488**	-0.419**	0.045
Origin	Shkodra	-0.124	-1.342**	-0.045
	Korca	-0.437**	-1.751**	0.153**
	Gjirokaster	0.561**	3.093**	-0.108**

** Significant at 1%
Source: Authors' calculations based on survey data

mers into 2, 3, 4 and 5 classes. The CAIC falls drastically when moving from 2 class segmentation to 3 class segmentation; it falls less when moving from 3 class to 4 class segmentation and even less when moving from 4 class to 5 class segmentation. Therefore, we chose the 3-class segmentation model of cheese consumers for interpretation. The parameter estimates are illustrated in Table 6. In general, the parameters for the attribute "Type of milk" are not significant for all the classes, indicating that this attribute is not playing an important role in the choice.

Class 3 is the largest class, having the weighted probability of 48.7%. For consumers of this class, in general the coefficients have low values, showing that preferences are not particularly strong. For this group, price is the most important factor. Origin is not as important although consumers show preference for cheese from Korca.

Class 1 is the second largest class, representing a weighted probability of 29.1%. Also for this class, price is by far the most important attribute – consumers in this class are strongly price sensitive. They show preference for white cheese and they strongly prefer cheese from Gjirokaster to cheese from Korca (with Shkodra in between).

Consumers of Class 1 and Class 2 could be labelled "*everyday low price*" consumers since their apparent priority when choosing cheese is to reduce the related expenditure.

Class 2 is the smallest one, representing a weighted probability of 22.2%. For consumers of this class, origin is the most important factor – there is a strong preference for cheese from Gjirokaster compared to the other two available origins. White cheese is preferred to kashkavall. Consumers in this class show a preference for more expensive cheese, therefore they probably consider a price premium on a product as a signal indicating a higher quality product (Bonti-Ankomah and Yiridoe, 2006). Similar results were found for olive oil in Albania too (Chan-Halbrendt *et al.,* 2010). We could label this group "*quality seekers*" because of their attitude towards the fresher and renowned cheese options.

4. Discussion of the Results and Conclusions

This research work provides some understanding of the Albanian consumer preferences, by comparing specific attributes, namely origin within the country, type of milk, and type of cheese; price though not considered as a product attribute is usually included in CCD. The results show that indeed consumers can be grouped in homogeneous classes according to their preferences and that the area of origin is an important attribute, but its level of importance varies by consumer classes. In this study, we found three distinct classes of consumers. Two of the classes that have a strong preference for white cheese also prefer cheese from Gjirokaster; for one of these consumer classes (Class 2), origin is by far the most important attribute.

The preference of consumers for cheese of different origin within the country informs producers and policy makers on potentials to develop regional brands, including GI. Specifically for the case of Gjirokaster, which actually has a long tradition for cheese production, the presence of a large cluster of consumers who have a strong preference for cheese originating from that area can be promising. Identification of consumer groups with similar preferences indicates potential market segments that can be targeted by producers/traders. Processors and retailers can brand/label the product to promote preferred origin to increase sales and profits.

Geographical origin signals authenticity and quality and this information is often interpreted as a sort of guarantee. This is quite important, particularly for a country with weak law enforcement institutions also in regards food quality and safety. Based on consumer preferences for typical products, local government may consider the development of regional brands by promoting "regional outlets" – regional shops in main urban area where typical regions products are promoted.

Processing and marketing activities of traditional or local cheese, which some may have the potential to be upgraded to Protected Designation of Origin (PDO) and Protected Geographical Indication (PGI) may be supported. Albanian policymakers have to identify viable instruments of support for the adoption of GI certification schemes for dairy producers targeting the local markets. Development of capaci-

ties related to GI (PDO/PGI) certification can strengthen sector competitiveness. In order to maximise the benefits of such schemes, a challenge for the policymakers would remain the establishment of a proper legislative and institutional harmonised framework for the provision and enforcement of these certification schemes. The development of quality scheme may be facilitated by likely support in the context of EU integration given the importance of GI regulations in the EU.

Another important prerequisite to develop successful GI certification schemes is consumer trust. According to Imami *et al.* (2015), purchasing directly from producers and trusting in the seller/retailers (e.g. convenient shop or specialized dairy shop) are the main ways that most respondents see as origin guarantee of dairy products. Slightly less than half of respondents consider direct purchase as a source of origin guarantee, and 43.8 percent rely on seller as a source of origin guarantee. The trust in label is critically low - only 11 percent of respondents rely primarily on labels to ensure product origin.

Trust in the (private and publicly enforced) food labels containing information about food origin is very important – otherwise, despite the clear preference for products from a particular region, consumers may not incline towards paying a significantly high premium. Thus, in order to achieve success, it is necessary to have in place transparent, regulated and reliable GI certification combined with consumer awareness campaign which should address both – direct communication with consumers and communication with and through the traditional retailers.

This study has some *limitations* that need to be pointed out. First, it focuses only on urban consumers, despite the fact that almost half of the population still live in rural areas, who may have different consumption pattern. Furthermore, it only focuses in one single city (Tirana). However, as already noted, in terms of population and purchasing power Tirana represents the most important market in Albania. Thus, despite the fact that the findings cannot be generalized for all Albanian consumers, the information provided for the Tirana market is useful *per se*, but also can be considered as indicative information for other urban areas which, despite of important differences, have high degree of similarity in terms of culture.

A further limitation relates to the fact that socio-demographic variables were not part of the consumer segmentation analysis – information about socio-demographic profile of the consumer classes would be useful for private sector (e.g. when developing promotion). Socio-demographic characteristics have not been included in the model, since our aim in this paper was to focus on product's features. However, incorporating socio-demographic data into the analysis can be subject to future research work. Despite these limitations, the study provides information that may be helpful to practitioners and policy-makers to design their market management and regulation strategies, respectively.

Further research may consider assessing various dimensions of 'origin'. Quite often an indication of geographical origin becomes a surrogate for other information, and thus a guarantee of authenticity and quality (Marcoz, 2013). In a scarcity of information on products intrinsic attributes - and triggered by confusion and search costs - place of origin attributes may be used by consumers as a proxy for other desired features, such as food safety (Loureiro and McCluskey, 2000), food quality (Verlegh and Steenkamp, 1999), tradition, authenticity and exclusiveness (Lusk and Briggeman, 2009), unique rearing systems (Esposito *et al.,* 2014), ethnocentrism (Balabanis and Diamantopoulos, 2004), etc.

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