**TITLE: Milk market segmentation: Study on the Consumers preferences in the cities of Tirana, Fieri and Shkodra**

By:

**Dr. Ana KAPAJ (principal investigator)**

Agriculture University of Tirana, Faculty of Economy and Agribusiness, Dep. of Economy and Agrarian Policies

e-mail: [ani\_mane@yahoo.com](mailto:ani_mane@yahoo.com) , [amane@ubt.edu.al](mailto:amane@ubt.edu.al)

Tel: 00355 (0)68 40 13 723

**Dr. Eda DECI (collaborator)**

Agriculture University of Tirana, Faculty of Economy and Agribusiness, Dep. of Agribusiness Management

e-mail:[edeci@ubt.edu.al](mailto:edeci@ubt.edu.al)

Tel: 00355 (0)68 40 30 624

Department Chair: Prof. Dr. Donika KERCINI

Department Chair: Prof. Dr. Kristaq PATA

Dean of the Faculty: Prof. Dr. Bahri MUSABELLIU

Tirana, August 27, 2010

1. **Introduction and problem statement (1 page)**

Albania has been, is, and will remain for years a country where agriculture will play a very important role, actually 23% of GDP (MoAFCP-Report 2008a, p. 6). Therefore it is reasonable, if not inevitable to consider agriculture in any strategic planning of the country’s future development. Despite the importance of agriculture for the national economy, Albania is a net importer of agricultural products. According to the statistical Yearbook 2007 of MoAFCP (ministry of Agriculture, Food and Consumer Protection) the ratio of exports to imports in total states 1:8, the value of total import of milk and milk products in 2007 amounts 12.803.463 Euro (MoAFCP statistical yearbook 2007). However, in the process of approximation to the European Union (EU), Albania seeks potential export opportunities to EU and international food markets. Among the traditionally produced agricultural goods in Albania is also milk. The dairy industry, along with it the milk collection system, are still in the course of modernizing structures and technologies. In the late 1990s, the first private milk processing plants were established in different regions of the country. Most small processing units use traditional craftsmanship technologies until today. Actually there are a number of modern processing plants operating successfully, although these are struggling with the competition from informal markets. Nevertheless, consumers are discovering their preference for processed products.

In the last ten years Albania has gone through a lot of changes, which has also been reflected in the Albanians diet, product preferences and quality. As milk is a very important component of the Albanians diet, in this study we are trying to focus in different preferences of consumers toward milk attributes. These preferences might lead to market segmentations, in which producers and policy makers might focus to improve the product quality.

The evolution experienced by the food sector along with the availability of higher computational power has greatly changed in the last ten years the models analysts employ to explore the purchase and consumption patterns of the post-industrial society. Nowhere is the change in determinants of food selection by consumers more evident than in urban food markets. Here consumers are furthest removed from food production processes, and hence more dependent on cues and labeling information.

Typical food products must now compete in markets, which are wider and more segmented than they have ever been. Within this context, the purpose of our research is to analyze and contrast the preferences of urban Albanian consumers with regards to milk, which is a traditional component of the Albanians diet, widely adopted throughout Albania.

Due to the significance of livestock and milk production, particularly in rural areas, MoAFCP has selected the milk sector as a policy priority. The Albanian government and MoAFCP are inclined to support primary production and the dairy industry. One of the stated objectives is to improve the competitiveness of products in order to substitute for import and increase export potential. (Petrick, Schreiber, Weingarten, 2003)

1. **Objectives and Research Hypotheses (1/2 page)**

The main purpose of this study is to analyze if there are differences in the consumers preferences in choosing milk in the market. In other words we will try to find out how different consumers (regarding age, education, sex, income level, etc), consider different attributes of milk, when they buy the product. From these differences we can than determine the market segmentation toward this.

Objective: Determine the differences in consumer’s preferences on milk in Albanians three main districts Tirana, Fieri and Shkodra

*Hypothesis of the study:*

Different consumers regarding, age, education, sex, income level etc. react differently towards different milk attributes (price, geographical origin, brand, expiring date, fat and certification).

1. **Literature review (1 page)**

According the statistics of MoAFCP total milk production has increased from 948.000 tones in 2000, up to 1.016.000 tones in 2007 from which cow milk production was 868.000 tones in 2007 (MoAFCP statistical yearbook 2007). During 2007, the share of milk in the total GAO (Gross Agriculture Output) was 34 % and share of dairy products in Food industry production value was 12 %.

The dairy sector is one of the most important industries in the agro-business sector. It provides 90 % of the milk supply for Albanian consumers. (MAFCP-statistical yearbook 2007) This sector has been very significantly growing during the last five years. However, the industry remains relatively immature; although the raw milk production increased at a rate of 15% (MAFCP-statistical yearbook 2007) over the last five years. The production of high quality milk is the key to establish a profitable future for the dairy industry. The dairy sector is often exposed to risks linked to the raw material supply because there is not in place a vertically integrated system, concerning the raw material supply and the distribution of the products to the final consumer.

The Government of Albania aims at accelerating the modernization and restructuring of agriculture and food processing. The Rural Development Strategy (2007) foresees that the majority of the budget for rural development will be targeted at modernizing the buildings and livestock premises in the farm holdings, as well as the enterprises in the food processing industry. The primary target group for the assistance will be the medium-sized farmers and the micro, small and medium-sized processing units. The dairy and meat sectors will get priority. The Government has clearly expressed its objective to foster technological adjustment of the Albanian farm and food processing sectors to meet EU standards. For that reason the MoAFCP has planned some measures for supporting the increase of heard size and milk production as well as the improvement of processing technology, through the state budget and donor projects (Cela, Mece, Musabelliu, 2009)

Milk consumer awareness towards quality products, improvement of infrastructure, product quality (like fat, pasteurization, origin, expire date), preferences of consumers for Albanian agricultural products, increasing demand for dairy products, are considered as good opportunities of the milk processing sector (Cela, Mece., Musabelliu, 2009). The milk industry and the Albanian government could benefit from a study on consumer preferences of milk attributes, as this information could assist in the development of possible strategies for market segmentation, suitable pricing, product development and standardization.

1. **Method of analysis (1 page)**

Much empirical work from qualitative choice theory has made use of random utility-based discrete choice models (Ben-Akiva and Lerman, 1985; Train, 2003). This approach is vastly adopted when modeling choices from sets of multi-attribute alternatives. The consumer’s selection of milk from the large and varied range of available alternatives can be cast in this framework and analyzed with multinomial logit models, or some of its more flexible extensions.

More importantly, consumers may display regularity in the form of interdependence existing between tastes for certain attributes. In other words, the distribution of tastes may be correlated, and we will try to show how the existence of this correlation may be exploited to investigate the magnitude of preference-based market segments.

In this study we will use logit models in order to observe the relations that might exist between the dependent variable, that is the product attributes and the independent variables that are the consumers characteristic like age, profession, level of education, level of income and sex. The both two variables, dependent and independent in this case are discrete (descriptive) so the best model that can fit them is the logit model.

Looking into the possible relation between these variables, the results can lead us to determine different market segments. So, different consumers groups with certain characteristics like age, profession, income and sex, like to have milk with certain characteristics.

Statisticians and researchers are in general familiar with models of discrete dependent variables.

The multinomial logit model, see, e.g., McFadden (1972), as an example, captures how a discrete dependent variable is affected by a number of covariates. In many applications of such models, the aim is to model the mechanism behind how individuals are choosing among a finite number of alternatives. What many statisticians and researchers are not so familiar with is that such models are naturally arising from random utility theory which is a common way for economists to analyze the economics of discrete choice, see, e.g. Manski (1977). With some behavioral assumptions on how choices are made, a multinomial logit model arises which can then betted to observed data. Compared to many other fields in economics there is thus an unusually direct and mathematically stringent link between the economic theory and the statistical model used to operationalise it.

1. **Data collection and administration (1 page)**

The sample size that will be employed in the estimation will be 300 and will include consumers of milk, who regularly buy the product from large and small retailers. The design will cover 3 of the largest Albanian cities: Tirana (centre, population around 811 000), Fieri (south, population around 380 000) and Shkodra (north, population around 250 000) representing three main cities of the three main districts in Albania. With 95% confidence level we determine a sample size of 306. After that we will apply a stratified random sampling (relative to weight of each district population on total population). This procedure results in 173 customers in Tirana district, 81 customers in Fieri district and 52 in Shkodra districts. These cities are chosen to analyze choice behavior in large urban markets, so as to measure and characterize the product perception and preferences of consumers living far from the place where milk is produced.

The survey instrument will consist of a questionnaire developed with the contribution of different studies and people that are very much familiar with the milk market and also with market segmentation. The questionnaire will include several sections gathering information about the purchase and consumption behavior of milk.

Preliminary questions investigate the respondents’ knowledge of major competitors, while the central section will be geared to the elicitation of preferences, to allow the collection of data for the estimation of choice models. Consumers will be asked to rank according to their preferences different labels of milk. Each label will be described according to 6 main attributes reported in Table 1.

Table 1: Attributes and levels used in the ranking survey

|  |  |
| --- | --- |
| **Attribute** | **Level** |
| Brand | Different |
| Geographical origin | North, Centre, South of the country |
| Price | Different price levels |
| Expiring date | Short, Medium, Long expiring period |
| Fat | Different levels |
| Certification | Certified, Not certified |

We are choosing these attributes of milk because consumers seems to be very sensitive towards these attributes (Cela, Mece., Musabelliu, 2009). Also the price of the product is not a fixed variable, making in this way the consumers also sensitive toward this.

The data will be collected directly by asking the consumers in the market using face to face interviews. There will be a first phase of pre-testing the questionnaire by taking a sample of 20 consumers. Pre-trained students of the Master Course will be used for this purpose. The consumers in the market will be selected randomly trying to have different characteristics in age, profession, education, income level and sex. After the data collection there will be a verification of the data collected by checking from different randomly selected questionnaires and verified directly will the consumer that has been asked.

The data will be entered into the excel worksheet by the students and will be imported and analyzed by using SPSS software.

1. **Expected results (1/2 page)**

Doing this research we expect to find different preferences, on milk, in different cities from different consumer’s group. In this context we expect to derive market segmentation for milk product. Based in previous research on milk the expectation from this research will be market segmentation especially between consumers with different income level.

The empirical analysis we expect to show a sizeable diversity certification across three representative Albanian cities. Differences might be especially for product safety coming from quality certification.

We expect also a close relation between attribute like brand, price and origin of milk with consumer’s income level and profession

To conclude, in the end of this research we expect to show a clear picture on the consumer behavior towards milk, (market segmentation) and to help milk industry adjusting the marketing strategy to fit in the context of new findings.

1. **Table of objectives, activities, outputs and outcomes (1/2 page)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Objectives** | **Activities** | **Outputs** | **Outcomes** |
| Literature review; data on milk production and consumption in Albania, other studies, reasons why doing this study, etc. | Reading the literature | Selecting relevant literature | Writing the literature |
| Methodology; on qualitative choice theory and logit models helping to reach the objective of the study | Multinomial logit models | Discrete choice logit models | Writing methodology |
| Designing the questionnaire; on milk market segmentation and consumers preferences | Literature on questionnaire design | Selecting appropriate question | Writing the questionnaire |
| Collecting data; primary data in the cities of Tirana, Fieri and Shkodra | Face to face interviews | Filled questionnaire | Securing primary data |
| Data analysis; using SPSS | Entering data into spreadsheet (excel, SPSS | Analyzing with SPSS | Results |
| Writing final research on milk market segmentation and consumers preferences. | Writing the draft | Completed written research | Final research completed |

1. **Timeline of activities (1/2 page)**

|  |  |
| --- | --- |
| **Time** | **Activity** |
| 20 September-20 October | Designing the questionnaire on milk market segmentation and consumers preferences |
| 20-30 October | Pre-testing the questionnaire |
| 1 November -15 December | Primary data collection on milk market segmentation and consumers in the cities of Tirana, Fieri and Shkodra; entering the data in the excel sheet |
| 16 December -15 Jannuary | Second data collection, data on national milk production, consumption, prices, quality standards, etc. |
| 16 Jannuary-15 February | Data analysis |
| 16 February-10 March | Writing the final report on milk market segmentation and consumers preferences, |

1. **Pitfalls (1/2 page)**

*Response rate*

There might be costumers that do not want to answer correctly to the questionnaire. In this case were thinking to select other consumers in the market in order not to change the final number of the questionnaires.

*Questionnaire design*

By testing the questionnaire we can face problem of functionality. This can lead to postponement in the schedule described herein proposal. Postponement can occur due to additional time required for redesigning the questionnaire.

1. **References (1/2 page)**

Ben-Akiva, M.E., and S.R. Lerman. 1985. *Discrete choice analysis: theory and application to predict travel demand*. Cambridge: MIT press.

Bonnet, C., and M. Simioni. 2001. *Assessing Consumer Response to Protected Designation of Origin Labelling: A Mixed Multinomial Logit Approach*, European Review of Agricultural Economics 28: 433-449.

Burton, M., D. Rigby, T. Young, and S. James. 2001. *Consumer attitude to genetically modified organism in food in the UK.* European Review of Agricultural Economics 28: 479-498.

Cela.R, Mece.M, Musabelliu.B. 2009. *An assessment of the Competitiveness of the dairy food chain in Albania*, AgriPolicy Enlargement Network for Agripolicy Analysis.

Larue, B., Gale E. West, C. Gendron, R. Lambert. 2004. *Consumer Response to Functional Foods Produced by Conventional, Organic, or Genetic Manipulation.* Agribusiness: an International Journal 20: 155-166.

Manski, C. 1977. *The structure of random utility models.* Theory and decision, 8: 229–254.

Matsumoto, S. 2004. *Consumers' Responses to Front vs. Back Package GM Labels in Japan*, Journal of Agricultural & Food Industrial Organization 2: Article 5. <http://www.bepress.com/jafio/iss1/art5>.

McFadden, D., 1972. *Conditional logit analysis of qualitative choice behavior*. University of California, Institute of Urban and Regional Development.

Ministry of Agriculture Food & Consumer Protection. 2007. *Rural Development Strategy*. Tirana Albania

\_\_\_\_\_\_\_\_\_. 2007. *Annual* *Report.* Tirana Albania

\_\_\_\_\_\_\_\_\_. 2002. *Annual* *Report.* Tirana Albania

Petrick.M, Schreiber.C,.and Weingarten.P. 2003. *Competitiveness of milk and wine production and processing in Albania*, IAMA Forum, October.

Train, K.E. 2003. *Discrete choice methods with simulation*. Cambridge: University Press.

1. **Budget**

|  |  |  |  |
| --- | --- | --- | --- |
| Budget Items | AHEED $ | FEA $ | In-kind match $ |
| 1. Salary and Wages   -Wages for students | ($6 per questionnaire\*300 questionnaire)  $1800 | - | $1000 |
| 1. Equipment   -Laptop for data input and analysis  -Desk-top computer |  | $250 | - |
| 1. Misc. Supplies   -Survey printing  -Telephone  -Office space | $100 | $100 | $150 |
| 1. Other   -Software program (SPSS)  -Office package | $250 | $350 | - |
| 1. Publishing | $450 |  |  |
| 1. Travel Expenses   -Travel expenses to Fieri and Shkodra for survey/per diem  -Car use | $400 | - | $150 |
| 1. **Sub-total** | **$3,000** | **$700** | **$1,300** |
| 1. **Total** | **$5,000** | | |

*Note:*

Payment for questionnaire (data collection and entry): $6 per questionnaires\*300 questionnaires = **$1800**

6 students (2 in Tirana, 2 in Fieri and 2 in Shkodra)

2 students (in Tirana)\*$10 (per diem-only meals)\*3 days = $60

2 students (in Fieri)\*$30 (per diem; meals-$10 and lodging-$20)\*3 days (2 nights) = $170

2 students (in Shkodra)\*$30 (per diem; meals-$10 and lodging-$20)\*3 days (2 nights) = $170

TOTAL travel expenses **$400**

Short Bio of Collaborators (one page, title, area of research interests and list of publications in the past 5 years)

**Doc. Dr. Ana Kapaj**

Department of Economy and Agrarian Policy, Faculty of Economy and Agribusiness

June 2010: Docent Title, Agricultural University of Tirana

December 2008: PhD. Doctor of Science Title, Agricultural University of Tirana

September 2004: MSc. Title, University of Hohenheim, Germany

*List of Publications:*

⇒ KAPAJ. A. (2010), “Assesing the Comprative Advantage of Albanian Olive Oil Production”, IFAMR International Food &Agribusiness Management Association, Volume 13, issue 1, 2010, https://www.ifama.org/publications/chainletter/cmsdocs/9i1.pdf

⇒ KAPAJ A. (2010): “Identifying some key indicators Benchmarks, helping meat processors in Albania improving their management decisions”, Anual Conference of IAMA (International Food &Agribusiness Management Association), 20th Anual World Symposium, Boston, USA, June 2010.

⇒ KAPAJ A. (2010): “What to produce and for whom to produce. Albanian case”, Anual Conference of IAMA (International Food &Agribusiness Management Association), 20th Anual World Symposium, Boston, USA, June 2010.

⇒ KAPAJ A. (2010): “Investigation on production opportunities and resource use efficiency in agricultural production of Albania”, Anual Conference of IAMA (International Food &Agribusiness Management Association), 20th Anual World Symposium, Boston, USA, June 2010.

⇒ KAPAJ A. (2009): “New Perspectives on Financing Agriculture and Small Business by Solid Financial Institutions”, International Conference-Economies in Transition, During and After, Shkoder, 4 December 2009.

⇒ KAPAJ A. (2009) co-author: “Assessing the comparative advantage of olive oil production in Albania”, Anual Conference of IAMA (International Food &Agribusiness Management Association), 19th Anual World Symposium, Budapest, Hungary, June 20-23 2009

⇒ KAPAJ A. (2009): Market Oriented Strategies to Rivitalize Albania’sAgricultural Industry-Symposium-Special Session, IAMA 19th Anual World Symposium, Budapest, Hungary, June 20-23 2009

⇒ KAPAJ A. (2009): “Vertical Integration in the Wine Industry, a Benchmark Analysis”, IAMO Forum, 17-19 June 2009.

⇒ KAPAJ. A. (2005), “Olive Oil Production in Albania”, Quart.Jour.Armenian Agricultural Academy, 2005/2, Yarevan 2005

**Dr. Eda Deci**

Department of Agribusiness, Faculty of Economy and Agribusiness

January 2009: PhD. Doctor of Science Title, Agricultural University of Tirana

*List of Publications:*

⇒ DEÇI E.(2009): “ Microfinance the perspective on financing small business” ‘Revista Ekonomike“ Ekonomia dhe tranzicioni” ACER, yeur XIII, Nr 4(55)

⇒ Deci E. (2009)”Faktoret percaktues te investimeve te huaja direkte ne Shqiperi” ‘Buletini i Shkencave Bujqesore’ journal, Nr.3/2008, pg. 120-125

⇒ DEÇI E. (2009) “ Aspekte te financimit te bizneseve te vogla dhe te mesme” Revista Ekonomike “Ekonomia dhe tranzicioni” ACER, viti XVI, Nr 5(60),Tirane 2009

⇒ DEÇI E. (2010): “Investigation on production opportunities and resource use efficiency in agricultural production of Albania”, Anual Conference of IAMA (International Food &Agribusiness Management Association), 20th Anual World Symposium, Boston, USA, June 2010.

⇒ DEÇI E. (2009): “New Perspectives on Financing Agriculture and Small Business by Solid Financial Institutions”, International Conference-Economies in Transition, During and After, Shkoder, 4 December 2009.