Assessing quality and safety of food & beverage products. An analysis of agribusiness enterprises in Tirana district/Albania.

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Problem statement

In the last decade quality has become of outmost importance to society. Consumers have become more conscious of quality, and organizations are now judged more on their overall quality performance instead of their financial performance alone. The most drastic change in quality thinking is probably the change from production-oriented to costumer-oriented concepts. Moreover, integrative approaches, system thinking, the focus on advanced technologies and belief in human capacities have had a considerable impact on current quality management (Schiefer, 2002)

Quality has become a vital distinctive feature for competition in the world market of food products. To obtain a good quality end product, quality is more and more managed along the whole food chain from the supplier of raw materials to the consumption. Striving for quality is not a free choice. Costumer understanding of food quality and the ultimate concern for health and food safety force actors in agribusiness and food industry to use quality management as a strategic issue in innovation and production (Luning, Marcelis, Jongen, 2002).

Although before the nineties there existed a good tradition, the current industry of the food and beverage processing is a relatively new industry, established mainly in these last 15 years. Exploiting all the possibilities and the resources and overcoming the difficulties faced during development, it has always managed to satisfy the quantitative needs of the Albanian consumers.

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Nowadays the most important and delicate problem related to the food products and beverages is the quality and safety of these products (avoiding elements in the content of these products that damage and endanger the health). This problem is becoming more sensitive as the food and beverages industry is starting to prepare for introducing its products in a larger and more organized way in the foreign markets, but firstly in the European market.

Food industry in Albania has to achieve the quality standards in order to be competitive in future open export markets (while aiming to enter in the EU countries). This research will consist in the identification of level of the implementation of these quality standards in food and beverage industry in Tirana district, problems that this industry faces in this region, and help to identify the incentive policies to support the managerial staff of enterprises implementing successfully these quality management systems (Civici, 2003)

Policy-makers, based on this scientific research can orient their policies better and make them more effective for food industry and food safety.

A large number of enterprises in food industry suffer for lack of information in the field of quality management and they need theoretical and practical training in this field.

Based on the fact that agriculture and food industry sector is the largest contributor in the Albanian GDP 52% of GDP in 2003 (INSTAT, 2004), governmental policies in Albania aim at further development of this sector.

This study investigates the current situation in food and beverage processing enterprises in Tirana district/Albania with special emphasis on quality standards and quality improvement towards consumer preferences. The situation is elaborated using a descriptive statistical analysis on data gathered by field survey using questionnaires.

Objectives

The purpose of this study is to examine the current situation in food processing sector in Tirana districts/Albania regarding quality management systems and availability of information regarding quality and safety of the food and beverage products in, decision-making for improving the quality of the product.

Making evident and evaluating the current situation of the food and beverages processing in Tirana district enterprises in a general plan in the field of products quality and safety. The overall objective of this research project is to assess the degree of implementing the quality management systems by food processing industry Tirana district.

Identifying the problems that agribusinesses face in their efforts of getting the information regarding quality and quality management systems can help the policy- makers to orient their policies towards making available that kind of information for them.

The specific goal of this study is to provide information for policy-makers in the field of agro-industry (food industry), on one hand, and on the other hand also to provide some information, related to quality assurance systems (QA), for managerial staff of food industry enterprises to help them in orienting their decisions towards improving quality management.

Procedures/Methodology

A descriptive methodology was used for this study in order to present and describe a picture of food and beverage industry in Tirana district. A survey was administered to a randomly selected sample of food processing enterprises operating in Tirana district identified by the Ministry of Agriculture Food and Consumer Protection (MoAFCP). The term 'survey' is commonly applied to a research methodology designed to collect data from a specific population, or a sample from that population, and typically utilizes a questionnaire or an interview as a survey instrument (Robson, 1993).

Sample selection

Information about the food processing enterprises in Tirana district was compiled from the Ministry of Agriculture Food and Consumer Protection (MoAFCP) in Albania. A stratified random sampling was the way of selecting the sample.

Before stratified random sampling a pre-classification of food processing enterprises was done. Based on the number of employees were identified small, medium and large scale enterprises. The information about the number of employees was provided by the MoAFCP.

The researcher took the same percentage of the enterprises in each group. On those three groups of enterprises a random sampling was applied and 35 enterprises were selected. The reason

behind this is to include in the study different enterprise sizes in order to get a better representation of the food processing sector.

Random sampling is the best single way to obtain a representative sample. No technique, not even random sampling, and guarantees a representative sample, but the probability is higher for this procedure than for any other (Henry, 1990).

Robson (1993) tells us that sampling theory supports stratified random sampling as an efficient choice because the means of the stratified samples are likely to be closer to the mean of the overall population l. Finally stratified random samples will typically reflect the characteristics of the population as a whole.

Questionnaire design

To achieve the objectives of this study, a face to face interview questionnaire was utilized. The questionnaire was product of literature review and discussion with people with experience in the field of questionnaire design.

Implementation of the survey and data collection

Face to face interviews questionnaires were conducted for collecting the data. According to Dillman (1978) face-to-face interviews survey method allow for the possibility of obtaining somewhat more complete and accurate results than the other survey methods, but only if interviewers are well-trained and consistent. The researcher judges this method as appropriated once, even it is expensive under Albanian' conditions. Using mailed questionnaires in the case of Albania is impossible due to the lack of network and communication skills via mail. A pre-contact was done in the beginning with managers or owners of the selected food processing enterprises by phone. The data and location of the face to face interview questionnaire were decided via phone calls. In order to ensure clarity and reliable data, all face-to-face interviews questionnaire were done by pre-trained staff.

Data Analysis

Most questions in the questionnaire will be closed-ended. A code system was developed to make the data entry process easier. The data were entered into Microsoft's Excel spreadsheet program. The accuracy of data entry was checked by frequency counts of each category.

Frequencies, charts and descriptive statistics such as percentage, crosstab and association between variables were calculated by using SPSS computer program.

Results/ Research outcomes

The enterprises were asked about their levels of knowing EU legislation regarding quality and safety of the products. Around 49% responded that they know very well and 26% know mostly. But the percentage that is concerning is the rest remaining, so about 24% that has a moderate or don't have at all information regarding the EU legislation. Another study (Decolli,, 2005) shows that the percentage of enterprises knowing the EU legislation has increased by 17% in 2008 compared to 2005. That is a positive trend which shows that enterprises are aware of the importance of knowing these regulations, necessary for entering regional and in the future European markets. It is important to underline that there are medium and large scale enterprises that have information about EU legislation. On the other hand some medium and, mostly, small scale firms do not have any information about EU legislation.
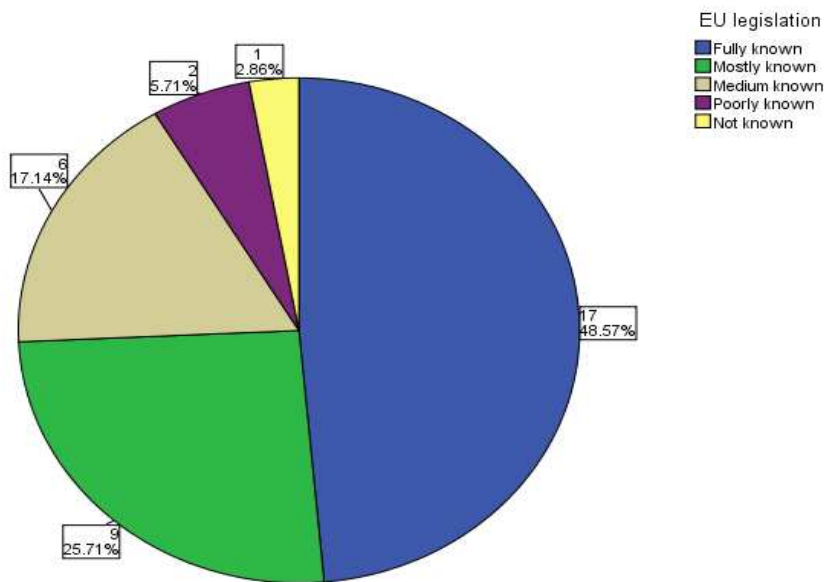
Graph 4   Level of knowing EU legislation regarding food and beverage quality and safety

Enterprises were asked whether they apply quality management standards. In the Table 1 below the results are shown. From the table we see that 25% of the enterprises that apply quality management standards are operating in local market and 75% which operate in national markets apply these standards. Also 88.9% of the enterprises that don't apply these standards are operating in local markets while the rest 11.1% are operating in national markets. From the numbers mentioned we can draw a general conclusion that there is an association between applying quality management standards and operational markets. To verify that conclusion we run in SPSS crosstab analyses and a statistical test analyses Table 2.

Table 1 Relation between operation markets and level of applying standards (SPSS table)

Applying management standards * Operational markets Cross tabulation						%within Applying management standards	% within Operational markets	%of Total
				Count	Expected Count			
Operational markets	Local	Applying management standards	Yes	2	5.9	25.0%	7.7%	5.7%
			No	24	20.1	88.9%	92.3%	68.6%
			Total	26	26.0	74.3%	100.0%	74.3%
	National	Applying management standards	Yes	6	2.1	75.0%	66.7%	17.1%
			No	3	6.9	11.1%	33.3%	8.6%
			Total	9	9.0	25.7%	100.0%	25.7%

Test analyses shows that there is a significant association between applying quality management standards and operational markets, Fisher's exact test $0.001 < 0.05$. That means that the more the enterprises expand and grow their markets (operating in larger than local markets) the more likely is that they will apply quality managements systems in their organization.

Table 2 Assessing the association between two variables (SPSS table)

Chi-Square Tests						
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	13.187[a]	1	.000	.001	.001	
Continuity Correction [b]	10.055	1	.002			
Likelihood Ratio	12.069	1	.001	.001	.001	
Fisher's Exact Test				.001	.001	
Linear-by-Linear Association	12.811[c]	1	.000	.001	.001	.001
N of Valid Cases	35					
a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.06.						
b. Computed only for a 2x2 table						
c. The standardized statistic is -3.579.						

To see how strong this significant association is we look at the symmetric measures table produced by SPSS. The contingency coefficient is .523 that represents relatively strong association between operational markets and necessity of applying quality management systems.

Table 3   Assessing the strength of association between Applying management standards and operational markets (SPSS table)

Symmetric Measures		Value	Approx. Sig.	Exact Sig.
Nominal by Nominal	Phi	-.614	.000	.001
	Cramer's V	.614	.000	.001
	Contingency Coefficient	.523	.000	.001
	N of Valid Cases	35		

This significant association we can see even in the bar chart below. When we move from local to national markets the number of enterprises that are applying quality management standards increase, and vice versa when we move from local to national the number of enterprises that don't   apply   these   standards   decrease.
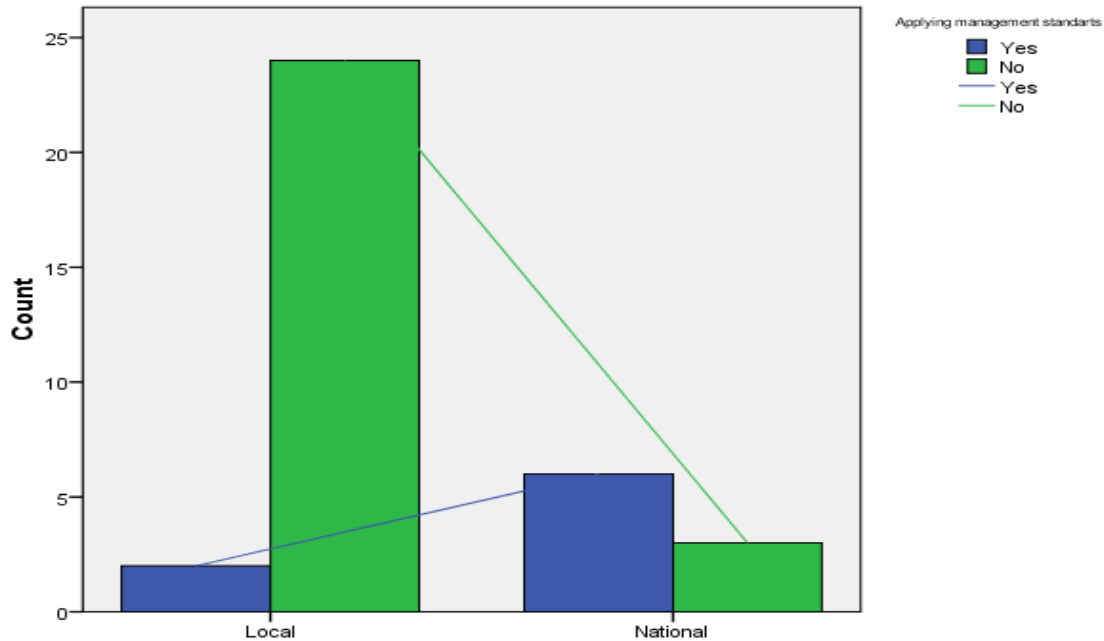
*Graph 1 Applying quality management standards vs Operational markets*

Regarding the information about consumer preferences the enterprises were asked for ways of gathering these information. The purpose of this question is to see the quality and the extent of information that enterprises use to evaluate consumer's preferences towards their products. Table 4 below represents a figure of responses.

Table 4   Sources of gathering information regarding consumer preferences (Spss table)

Information gathering	Frequencies			
		Responses		
		N	Percent	Percent of Cases
Information gathering	Company surveys	26	56.5%	74.3%
	Decision-making by participation	10	21.7%	28.6%
	Statistical information	5	10.9%	14.3%
	Nothing	1	2.2%	2.9%
	Other sources	4	8.7%	11.4%
	Total	46	100.0%	131.4%

56.5% use company surveys for gathering information regarding consumer preferences. From the experienced research team who carried out the interviews it was realized that within the phrase "company survey" firms mean not scientific surveys but discrete information gathered by the retail sellers of the companies in the outlets owned by firms. So, it is not a real scientific survey and as consequence the results may not be accurate. 21.7% practice decision-making by participation in that respect, around 11% are using statistical information from the statistical institution, which are mainly governments institutions and the rest using nothing or other sources. As a possible answer in the questionnaire was "scientific studies from universities". It is not shown in the frequency table because no one is using these kind of information regarding consumer preferences.

Companies were asked whether they want to invest in training the employees with respect to quality and safety. The results in the Graph 2 below show their willingness to invest in this direction.
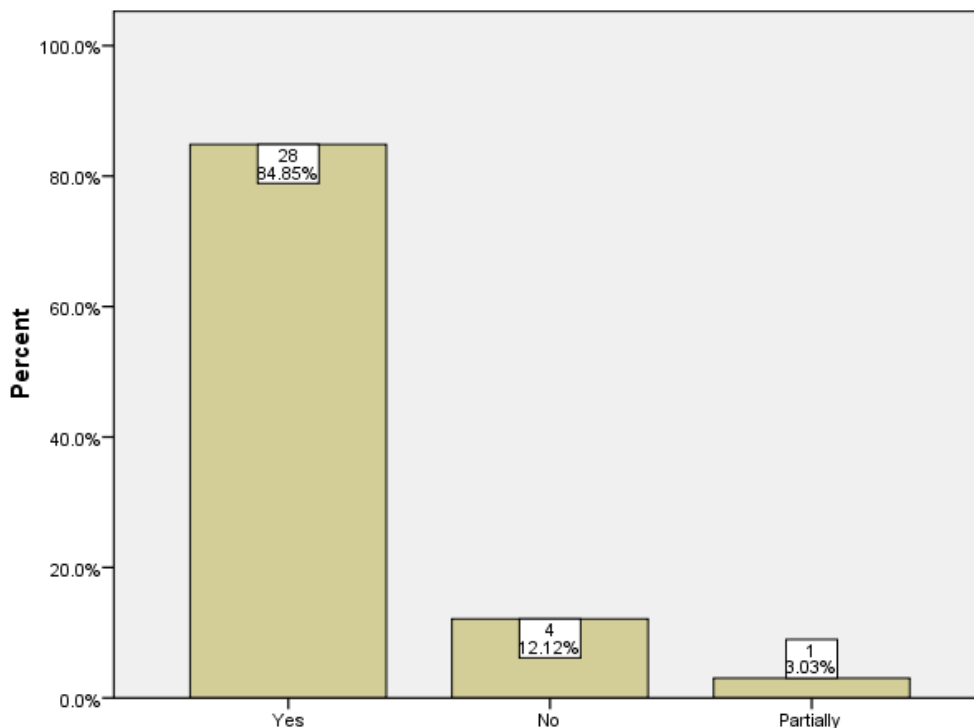
Graph 2 Willingness to invest on training in field product's quality and safety

Around 85% of the enterprises included in the survey express their willingness to invest in training while 12% will not. But, taking into consideration these figures, why they face a lack of information and appropriate skills with respect to quality and safety. To determine the factors that might be crucial for not taking this action of training, the companies were asked to state the main constraints in their efforts improving employee's skills with regard to quality and as a consequence quality of their products.

As shown in the Graph 3 below 74% of the enterprises included in the survey stated that there is a lack of financial means the main constrain for training in the field of quality and safety and for technological renovation to face the quality challenge.
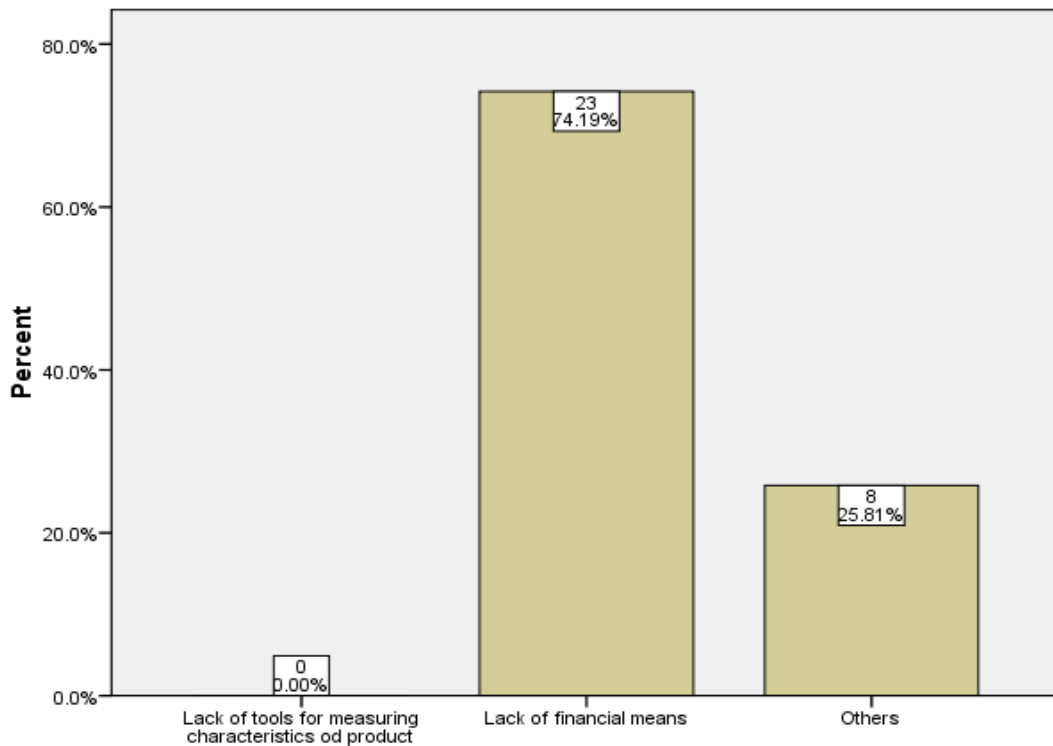
Graph 3   Constrain factors for training and technology renovation to face quality challenges

They stated that they have the willingness to invest in technological renovation and training in the field of quality and safety, but don't have the required resources (financial means) for doing so.

Conclusions/Discussions

The EU legislation, dealing with quality aspect of food and beverages, generally is not well known in food and beverage enterprises in Tirana district/Albania. Only 49% of the enterprises interviewed have full knowledge about this legislation while 42% have a basic knowledge regarding EU legislation. 8% of them don't know anything about EU legislation. In year 2005, (Deçolli, 2005), 59% of the enterprises in Albania know the EU legislation about quality and safety. Considering our figure (49%) the knowledge about EU quality and safety standards is more developed in 2008 than in 2005. Another factor is that in Tirana districts consumers are more educated about quality and safety and their demand for quality food is continuously increasing.

Only a small percentage of enterprises (around 23% out of 35 included in the survey) have established the quality management systems in Tirana districts while 77% don't apply these standards. However, the situation is promising since Tirana district is a highly densely area and in the same time there is the biggest market for food products, consequently, consumer pressure towards improving quality is tight. As we reveled that there is a positive and significant relationship between applying quality management standards and operational markets. Those enterprises that operate in national markets are more likely to implement quality management standards in relation with those operating in local markets. From this association we can say that being large (in terms of operating in bigger markets) requires further steps in improving the quality and safety of the products. Also, operation in large markets demands serious commitment with respect to consumer's preferences towards quality and safety of food products. On the other hand, this relationship reveals the necessity of enforcing these standards in local markets. It is the task of inspection bodies within local government to enforce implementing quality standards in interest of consumer's rights for healthy and safe food. According to Morath (2008), the most crucial and influential factors affecting medium and long- term commercial success, in food enterprises in Germany, are management and consumer satisfaction.

Generally food and beverage processing enterprises in Albania are not using scientific studies (studies from universities etc.) for gathering the information about consumer preferences with regard to quality. 56% of them using company surveys for gathering information about

consumers preferences about quality and safety, 22% practice decision-making by participation, around 11% using statistical bulletins and the rest 11% using other sources. None of the enterprises included in the survey don't use studies from universities in gathering information about the markets and especially about consumer preferences towards quality and safety. That shows an absent link between scientific bodies (universities) and business sector. Promoting these links and the ways of promoting can be an open topic for further research and discussion.

Despite the source of information gathering all enterprises orient their production towards consumer preferences.

Relying on our survey 85% of the enterprises express their willingness to invest on training in the field of product quality and safety while 12% didn't. But as we discovered there are some constrain factor that prevent enterprises invest for training and technological renovation. 75% of the enterprises interviewed think that lack of financial means is the major factor. Enterprises must more seriously address the issue of investing in training their employees not only expressing the willingness to invest but taking concrete actions. In these trainings, which could be organized within or outside the enterprise, besides the knowledge indirectly connected with quality and safety of the products, employees, especially those of the sector of production and quality control, must acquire more thorough and extensive knowledge in the field of quality and safety, according to the levels and in the interest of their job position. The question raised, what could be the appropriate way of solving this problem, is again an open topic for further research. The managers of food and beverages enterprises must raise the level of basic knowledge related to the Western Philosophy on Quality. They must gradually place the quality axis in the center of the development of their enterprises. According to Morath (2008), 90% of the enterprises in German food and beverage industry consider the continuous training, in terms of quality and safety of the products, a necessity.

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