CONSUMER CONFIDENCE ON FOOD SAFETY INSTITUTIONS IN KOSOVO – WHETHER IT INFLUENCES DAIRY CONSUMER'S WILLINGNESS TO PAY?

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Abstract

The objective of the paper is to measure how food safety institutions and producers affects consumer confidence – to what extent is the consumer willing to pay an 'extra' price for products which are "food safety" certified. Institutions in-charge of ensuring food safety are the Agency of Food and Veterinary and National Institute for Public Health. The respondents of the research comprise of consumers of dairy products. The sample involves 303 consumers who were interviewed in five Viva Fresh supermarkets in three municipalities (Prishtina, Gjilan and Vitia). The respondents were interviewed 'on the spot' after they had purchased the dairy foods. The descriptive statistics indicate lack of consumer confidence on public institutions and producers of dairy products. However, logistic regression results indicate that the "food safety" stamp has a 'significant' effect on the consumer's willingness to pay a premium price. These findings are extremely relevant to both political and business decision-makers to undertake necessary measures in order to improve the consumer confidence.

Keyword: Food Safety, Willingness to Pay, Consumer Confidence, Dairy Products, Kosovo

INTRODUCTION

Consumer confidence depends on the performance of public institutions in controlling food safety and producers in adhering to standards of food safety. For our purpose, consumer confidence is defined as "the belief in the honesty, fairness, and goodwill of a source or

institution to assess, manage, and communicate about food safety risks, consistent with the public good" (FAO/WHO, 2014, p. 30).

The Food and Agriculture Organization (FAO) and World Health Organization (WHO) associate consumer confidence to 'social trust.' Accordingly, "it is important that people trust that institutions responsible for food safety are working for the public interest and will take definitive actions to protect the health of humans, animals and the environment above the economic, political, or personal interests of specific individual companies or political organizations." (FAO/WHO, 2014, p. 32) Trust towards regulators and actors involved in food chain is "a minimum requirement for confidence in the safety of food assuming such trust is one of the mechanisms by which confidence is created and sustained" (De Jonge, Frewer, Van Trijp, Jane Renes, De Wit & Timmers, 2004).

The leading public institution in charge of food safety in Kosovo is the Agency of Food and Veterinary. This institution was established in accordance with the Law on Food and the overall legal requirements set in the Acquis Communitaire of the European Union. Its responsibility is "to protect the life and health of citizens by ensuring food safety at the highest level" (http://www.auv-ks.net/?page=1,65). The Law requires that producers abide by the principles Hazard Analysis Critical Control Point (HACCP) on food safety.

The public trust towards public institutions in general is on the decline according to many international organizations. In 2013, Transparency International (TI) has ranked Kosovo in the 111th place out of 175 countries for being corrupt. A year later Kosovo was ranked in the 110th place by the same institution (http://www.transparency.org/research/cpi/overview). Corruption is perhaps the reason why there is little trust towards public institutions as it has also been indicated in the Public Pulse by the United Nations Development Program (UNDP) (http://www.ks.undp.org/content/kosovo/en/home/library/democratic_governance/public-pulse-10/).

Measuring public trust towards foods which are 'food safety' certified by the Agency is the aim of this study in order to compare whether that has an effect on consumer confidence. The stamp on food has an effect on consumer behavior as it has been the case in China and Finland. In China, the state food safety stamp, known as the National Inspection Exemption (NIE) has a significant effect on consumers especially those who are highly educated and are inclined to buy local foods. The preference for the stamped food also applied to consumption of dairy products. (Jin, Lin & Yao, 2011, May) In Finland, consumers highly trust the public institutions responsible for ensuring food safety. Food safety is also a concern to Kosovars. Canavari, Imami, Gjonbalaj & Alishani (2014) found that two thirds (2/3) of consumers interviewed in Kosovo claimed to be very concerned regarding food safety.

The question is how are consumers willing to pay for a premium price if dairy products are certified for being safe (based on HACCP and ISO 22000 standards). The purpose of this paper is to assess if the trust towards food safety public institutions and producers affects the consumer's willingness to pay an additional price (premium price). The report is structured as in the following. The objectives and hypothesis are presented at first. Then the findings and recommendations are presented after the research methods and procedures are discussed.

Objectives and Hypothesis

Initially, the research study assessed the level of trust/confidence of consumers towards public institutions and private producers of dairy products in Kosovo. The main objective of the study is to measure the extent trust has on the willingness of consumers to pay for an additional price if the dairy products are food safety certified.

The hypothesis is tested as in the following

1. Greater consumer trust on public institutions has a positive effect on the willingness to pay for an additional price for products which are food safety certified;

2. Greater consumer trust on local producers has a positive effect on the willingness to pay for an additional price for products which are food safety certified;

3. Greater consumer awareness on food safety standards has a positive effect on the willingness to pay for an additional price for products which are food safety certified; and

4. Pressure from dairy associations to increase food safety has a positive effect on the willingness of consumers to pay for an additional price for products which are food safety certified.

RESEARCH METHODOLOGY

Methods

For this study, we have used contingent valuation method (CVM) as a method used for measuring the value of nonmarket goods when data on non-market goods attributes are missing. Contingent valuation method has proven particularly useful when implemented alone or jointly with other valuation technique for non-market goods, such as the travel cost method or hedonic approaches (Alberini & Cooper, 2000). It is most often used method in studies dealing with food quality and safety characteristics (Latvala & Kola, 2003). As stated by Alberini & Cooper (2000), CVM requires that the data collection is done through a survey asking consumers information on research questions through face-to-face interviews. Given that this method is stated preferences method which extracts information asking hypothetic questions, obtaining reliable information is a critical importance. To deal with methodological challenge, the

field research has been conducted at a time of purchase, i.e. within focal points of sale, where consumers make decisions about buying. This way, the data is taken directly from the decision-makers and as such it will draw real customer preferences (Loureiro & Umberger, 2003).

Model

The logistic regression and linear regression models has been used to test the hypothesis. In first case, "willingness to pay a price premium for additional food safety" – WTP – which is our first dependent variable; refer to Table 1 for operationalization of dependent and independent variables. Since the first dependent variable is dichotomous in this case, then the model with dummy dependent variable will be the binary logit model (Osmani, 2010), as shown by Formula 1.

$$P_i = \frac{1}{1+e^{-a-b_iX_i}} \qquad (1)$$

Where P_i is the probability that a consumer fall into the group of consumers who are willing to pay a premium, x_i are explanatory variables and b_i are parameters to be estimated.

As seen from the above, this model is not linear in terms of parameters, and thus, ordinary least squares (OLS) cannot be used directly for this assessment. It can be transformed into linear and behave as such in the following form:

$$L_i = ln\frac{P_i}{1-P_i} = a + b_iX_i + e_i \quad (2)$$

To simplify understanding of the model and interpretation, in our case, if the customer says positively to pay additional price we define as success and mark 1, and on the contrary, if the customer rejects to pay the additional price we mark 0. The ratio between probability of success and failure of the independent variable (the independent variable is categorical) is the expression in formula (2)**:** $\frac{P_i}{1-P_i}$ which is called odds. From here the logistic regression equation is as the following:

$$log(odds) = a + b_iX_i + e_i \quad (3)$$

The Data

The data was obtained through the survey. The questionnaire was prepared and tested well in advance. The survey was conducted within the premises of the supermarket chain store Viva Fresh. The targeted dairy products for the assessment include white cheese, milk and yogurt. The survey was conducted within the supermarket because: (i) the customer was interviewed immediately after the commission of the acquisition; (ii) during the interview, the customer had the chance to also have other products exhibited which helps in providing more accurately

thought of his decision taking into account alternatives; (iii) consumers have been in a condition to express more realistically regarding questions about how they take decisions after they have purchased the product and have been able to look at the label content.

In the survey, which was conducted from April 1 to May 5, 2015, 303 consumers aged over 18 years have been interviewed. Customer choice is made at random. After finishing an interview, the next interview was conducted with the first customer who bought dairy products and who agreed to be interviewed.

Based on dairy quantity sold by Viva Fresh Store selling points, and based on the socio-economic and demographic census in the Republic of Kosovo (ASK, 2013a; ASK, 2013b; ASK, 2013c) selling points have been selected in three cities in such a way that the samples is as representative as possible. In the capital Pristina, as the representative of the group of cities with over 100 thousand inhabitants, were conducted 153 surveys at its widest point is in the suburbs (Veternik). In Gjilan, as the representatives of the group of 50 to 100 thousand inhabitants, 110 surveys were conducted in two points of the sale city. 40 interviews were conducted in a sales point of Viva Fresh Store, in this year (less than 50 thousand inhabitants).

Table 1: Operational Aspects – Data from Surveys with Consumers

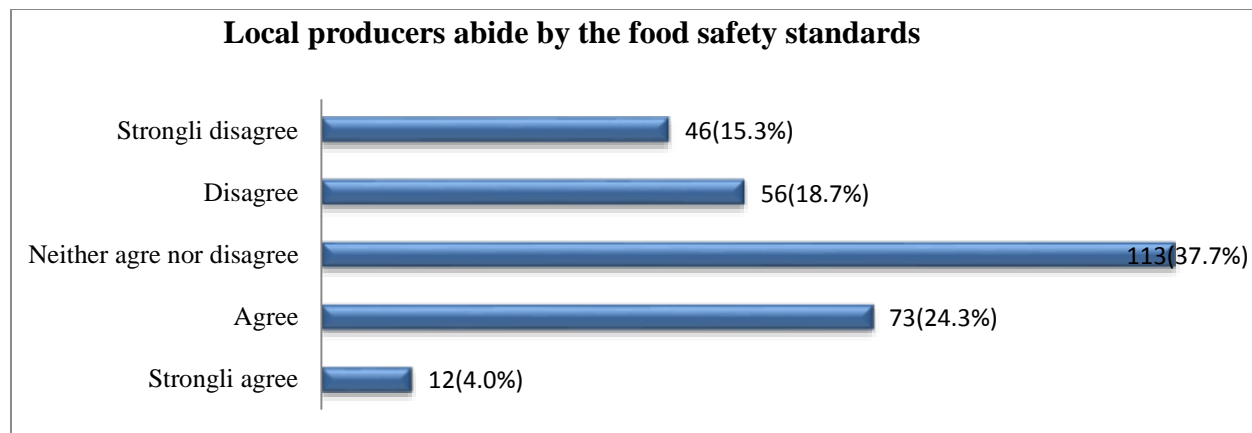| Hypotheses	Concept	Variable	Method of Measure
	Dependent Variable		
	Willingness to pay	WTP	Dummy variable 1= YES; 0 = NO
	Ndryshoret e pavarura		
1	Local producers abide by the food safety standards	*TrustManuf*	Ordinal variable Likert scale: 1- Strongly disagree 2- Disagree
2	Institutions control food quality and safety of dairy products	*TrustInstit*	3- Neither agree nor disagree 4- Agree 5- Strongly agree
4	Consumers and associations exercise pressure for an increase of food safety	*TrustAsoc*	
3	The importance of certification stamp for food safety	*CertEvalu*	Ordinal variable Likert scale 1=Yes; Not at al (least) 1 2 3 4 5 mostly

ANALYSIS AND RESULTS

Descriptive Results

The independent variables have been measured using the Likert scale (Graph 1). Consumers were asked if they agree or disagree that public institutions and local producers adhere to the standards of food safety. They were also asked about the role of associations and how consumers perceive the importance of food safety certifications. For more details on the statistical findings, Table 2 presents the mean and standard deviation for each of the questions asked in the field.

Table 2: The Average Mean of Independent Variables

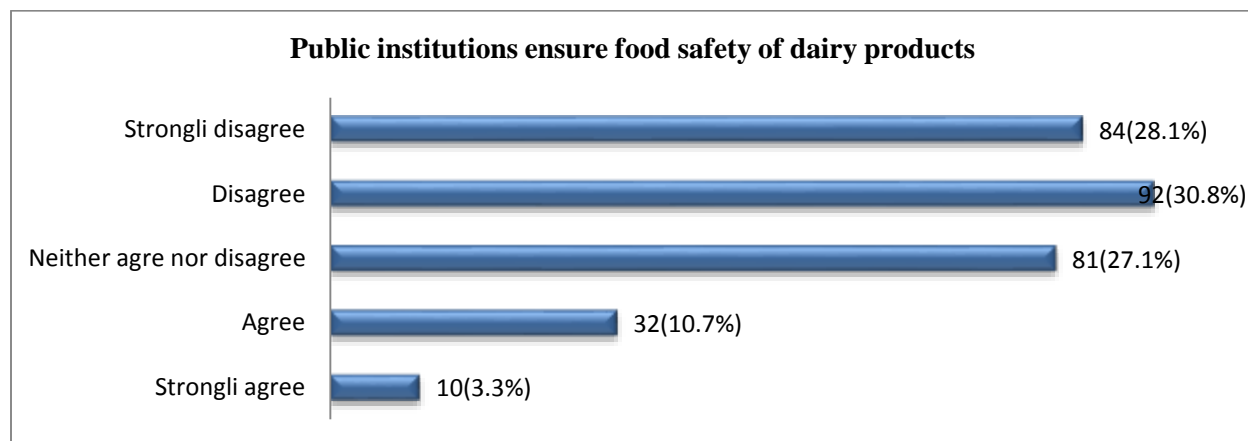|	Mean	Std. Deviation
Local producers abide by the food safety standards	2,83	1,086
Institutions control food quality and safety of dairy products	2,30	1,092
Consumers and associations exercise pressure for an increase of food safety	2,87	1,117
The importance of certification stamp for food safety	3,19	1,332

In Graph 1, we noted that, in terms of consumer confidence on the producers, higher frequency option valuation is neutral (37.7 percent). Consumers trust less local producers, that they adhere by food safety standards. About 34 percent do not agree while 18.7 percent disagree or 15.3 percent completely disagree that local producers abide by the food safety standards.

Graph 1: Level of Consumer Trust towards Local Producers

Local producers abide by the food safety standards

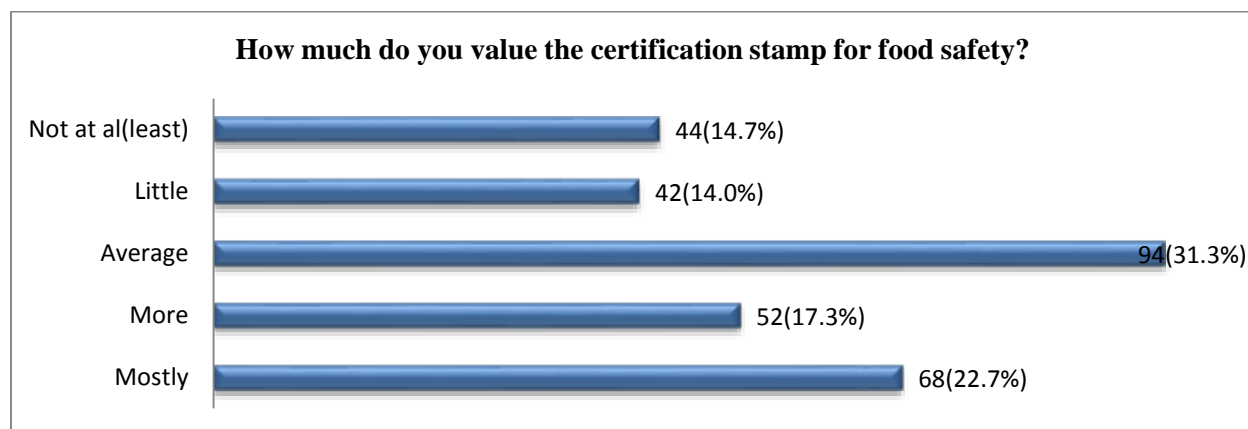|	
Strongli disagree	46(15.3%)
Disagree	56(18.7%)
Neither agre nor disagree	113(37.7%)
Agree	73(24.3%)
Strongli agree	12(4.0%)

In addition, there is lack of consumer trust on public institutions as presented in Graph 2. About 58.9 percent of consumers stated that they did not trust public institutions responsible for ensuring food safety. Whereas 28.1 percent strongly agreed and 30.8 percent strongly disagreed with the statement that, "public institutions ensure food safety of dairy products".

Graph 2: Level of Consumer Trust towards Public Institutions

Public institutions ensure food safety of dairy products

Response	Value
Strongli disagree	84(28.1%)
Disagree	92(30.8%)
Neither agre nor disagree	81(27.1%)
Agree	32(10.7%)
Strongli agree	10(3.3%)

The Graph 3 presents the level of trust consumers put on the certification stamp for food safety. There were more respondents who valued it more (40 percent) than those who valued it less or not at all (28.7 percent). The average number of respondents who believed in the food safety stamp comes around 31.3 percent.

Graph 2: The Importance of Certification Stamp for Food Safety

How much do you value the certification stamp for food safety?

Response	Value
Not at al(least)	44(14.7%)
Little	42(14.0%)
Average	94(31.3%)
More	52(17.3%)
Mostly	68(22.7%)

In general, consumers have more trust on the certification stamp for food safety than on public institutions or local producers. Public institutions responsible for ensuring food safety are the

least trusted institutions according to the research findings. In the following section, we will explain how these variables relate to WTP.

Results of the Tested Hypothesis

The logistic regression model with a dummy dependent variable separates the respondents in two categories: (1) respondents who are willing to pay for an additional price, and (2) respondents who are not willing to pay for an additional price (Latvala, 2010). Out of 302 consumers, 226 (74.8%) responded with a positive answer agreeing to the food safety effect on their willingness to pay for an additional price. It is important to note that all respondents were informed about food safety prior to interviewing them. They had to understand to make a distinction between food safety and food quality since the two can be easily associated with each other and misunderstood.

Table 3: Consumer's Willingness to Pay for an Additional Price – Descriptive Statistics

		Frekuenca	Percentage	Valid Percentage
Are you GPP for certified products?	jo	76	25,1	25,2
	po	226	74,6	74,8
	Total	302	99,7	100,0

The results were calculated using the SPSS application (Statistical Package for the Social Sciences). In Table 4, there is only the variable which relates with the certification stamp of food safety and it has a significant weight on the WTP.

Table 4: Logistic Regression Model

	B	Standard Error		Sig.	Odds ratio (e^b)	95% EXP(B)	C.I.for
			Wald			Lower	Upper
Constant	-,524	,543	,933	,334	,592		
TrustManuf	,035	,143	,058	,809	1,035	,782	1,371
TrustInstit	,104	,149	,485	,486	1,110	,828	1,486
TrustAsoc	,152	,129	1,403	,236	1,165	,905	1,498
CertEvalu	,292	,107	7,445	,006	1,339	1,086	1,651

This model fulfill the criteria testing of Hosmer and Lemeshow since the p-value = 0,809 > 0.05 which makes the model important. The hypothesis shows that the difference between data and model prognosis is statistically insignificant. This shows that the model is accurate in foreseeing data (Table 4).

Table 5: Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	4,502	8	,809

From the findings above we see variable "CertEvalu" has a significant influence on the probability for WTP for consumers who value more the certification stamp of food safety since the coefficient b>0 whereas the odds ratio (1.339) shows in favor of WTP it goes higher for 33.9 percent (1.339*100-100 = 33.9 percent) if it passes on from a lower category of trust to a higher category of trust, *cateris paribus*. We also have the results for the testing of hypothesis: only the third hypothesis is accepted which says that "higher level of consumer trust on products which are food safety certified has a positive effect on their willingness to pay for more for such products." Whereas three other hypothesis – 1, 2 and 4 – have a p-value less than 0.05 and were rejected.

CONCLUSIONS

The empirical findings of the research indicate that consumers in Kosovo have very little trust on institutions responsible for ensuring food safety. Hence, consumers trust very little dairy products which they purchase in the foods markets. This goes in line with the findings of Canavari, Imam, Gjonbalaj & Alishani (2014). According to their research, two thirds of consumers interviewed were concerned about food safety in Kosovo.

The certification stamp for food safety has an effect on consumer behavior. Consumers are more inclined to pay a premium price for dairy products which are stamped. In the research, only variable "CertEvalu" has proved significant for safety level above 99 percent. These findings refer to the international standards of food safety (ISO, HAACP) which are adopted by local institutions that are responsible for ensuring food safety and such certifying them before go out in the market.

Food safety and consumer confidence should be a priority in terms of economic development and policy-making. In this case, local producers of dairy foods must certify their products according to the standards of HACCP or ISO 22000 to be able to gain the consumer trust and ultimately compete in the international market. Meanwhile, as far as marketing activities, more emphasis should be placed on food safety and more information campaigns should be organized promoting it.

The Agency of Food and Veterinary should increase its capacities on food control and organize activities to increase public awareness on the importance of food safety. As stated in

FAO/WHO (2014), food safety risk communication should be based on good communication principles which include openness, timeliness, and responsiveness, to be able to develop and retain trust. Furthermore, food and health associations must also become more active in advocating for food safety measures.

There have been limitations to the research study in terms of covering all stakeholders. Hence, it is important that in future studies other stakeholders in the food chain industry are analyzed and that includes dairy food processors, consumer associations and other relevant institutions. This research would be able to assess the low level of consumer trust on these institutions. In addition, it would also be important to assess how consumer trust on institutions and producers has no effect on the consumer's willingness to pay.

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