Consumers' Attitudes toward Food Labelling in the Western Balkans

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Abstract: *The main purpose of this study is to shed light on consumers' attitudes toward food labelling in the Western Balkans. Pioneering in this respect, we present the results obtained from a cross-national consumer survey on a random representative sample of 3085 respondents, i.e. at least 500 respondents per country included. The survey covered six Western Balkans countries (WBC), namely Bosnia and Herzegovina, Croatia, Former Yugoslav Republic of Macedonia, Montenegro, Serbia and Slovenia. Differences in consumers' attitudes toward food labels as well as self-perceived level of information about food with health claims were tested according to a number of socio-demographic criteria, including gender, age, education, type of settlement and among the countries of the Western Balkans. The variables were also included as independents in a binary logistic model to better understand the factors that may influence consumers' confidence in the usefulness of health claims on product labels. The results showed that self-perceived level of information about functional food as well as consumers' attitudes toward food labelling are influencing factors of consumers' confidence in usefulness of health claims on product labels when making food choices. Based on all, we provide conclusions and implications for marketing managers and further research.*
Keywords: consumers, attitudes, food marketing, labelling, Western Balkans

1. INTRODUCTION

For several decades food labelling (including nutrition fact panels, nutrition and health claims and/or quality labelling) has been given scientific credence with regards to helping consumers make better choices while consuming and purchasing food products. Food labelling is a generic term for various special forms of information provided on food packaging such are nutrition fact panels, nutritional claims, health claims and quality claims. These are typically provided on front of pack (FOP) or back of pack (BOP). While the earliest form of food labelling was nutritional fact panel in a form of grid typically placed BOP, more recent food labelling also includes a various simplified claims which are now placed FOP (Grunert, Wills and Fernandez-Celemin, 2010).

The food labels are meant to convey specific information to consumers which may influence their decision to buy/consume particular food product. Due to their potentially strong influence on consumers' choice and in the light of raising diet-related health concerns, food labelling has become an issue of concern of both food marketers and health policy makers. While the marketing implications have predominantly been linked with the issue of how food labels may influence consumers buying intentions and behaviour, public health policy makers are mostly concerned with their effect on consumers' choice of a healthy diet.

The earliest evidence-based studies addressing the issue of nutritional labelling and its impact on food consumers' behaviour were conducted in the U.S.A. (e.g. Asam, Bucklin, 1973). Since the beginning of nineties of the last century, government regulations related with food labelling particularly fuelled scientific interest in how consumers' acquire, understand and interpret those claims when deciding what food products to consume (Andrews, Netemeyer, Burton, 1998). In the US the Nutritional Labelling and Educational ACT (NLEA) was approved in 1990. Subsequently, in 1994 the Food and Drug Administration (FDA) passed new regulations according to which nutritional labelling became mandatory for most of the food products sold on the U.S. market. Apart from the U.S. the evidence-based studies in the field of food labelling were also initiated in the Western Europe. A pan-European study - EU27 plus Turkey – was conducted within the EU funded project Food Labelling to Advance Better Education for Life (FLABEL) standing as *the first EU wide study providing an insight into exposure of consumers to nutrition information on food labels* (Bonsmann et all, 1998). By now, a considerable amount of research has been conducted related with consumers' use of nutritional information, nutritional and health claims (Kozub, Crayer, Burton, 2003).

However, to our knowledge the studies related with food labelling focusing on consumers' interest in the information provided on food packaging, their attitudes toward it and/or their usefulness when making food choice is almost non-existent in less developed European countries, including those of the Western Balkans (WBC). In general, while all over the region the nutritional information and health claims have been used on food packaging and in food advertisements, there is a considerable lack of information on how the consumers understand it and/or make use of it. Therefore, the primary goal of this paper is to shed light on the attitudes toward food labelling in WBC, taking into consideration both the efforts that consumers must undertake to read food labels and their attitudes toward the

usefulness of these labels in consumers' decision making. Further, our goal is to better understand how their attitudes toward food labels (together with other important factors such are level of information and socio-demographics) may influence consumers' confidence in the usefulness of health claims on product labels. The latter may be of particular interest of food marketers who have already started to include health claims on food packaging and in food advertising in WBC.

2. METHODOLOGY
2.1. Data collection
The consumer survey was conducted in September – October 2010 in the six countries of the Western Balkans - Bosnia and Herzegovina (BIH), Croatia (CRO), Former Yugoslav Republic of Macedonia (FYROM), Montenegro (MNE), Serbia (SER) and Slovenia (SLO). Stratified three-staged random representative sampling was applied to assure national representativeness in each of the six countries. The sample size was 3085 in total, i.e. a minimum of 500 respondents per country participated in the survey.

The Troldahl & Carter (1964) modification (T-C) of the Kish technique was used for data collection. In accordance, for selection of respondent within a household interviewers firstly ask about 1) *number of persons in the household aged 18+*, and 2) *number of male persons in the household aged 18+* and then use one of the 4 previously-developed tables with a verbal label for eligible household members randomly assigned to each of the surveyed units (Troldahl & Carter, 1964). The T-C modification was applied in our study because it provided a much simpler (i.e. less time-consuming and less costly) procedure for random selection of respondents within the surveyed household, thus allowing us to use a more extensive instrument for our survey. However, under criterion 2 (*number of male persons in the household aged 18+*) we used the number of female persons instead. This corresponded better with our tacit knowledge of women within the region being mostly responsible for household choices and purchases of food. Moreover, women have been empirically found to be most responsible for purchases of food not only in the Western Balkans but also in developed European market economies, such as Germany, for example (Stolz et al., 2011).

Collection of empirical data was entrusted to a well-established marketing agency operating in each of the six countries in the region. The agency was responsible for provision of structured training to the field researchers, conducting pilot testing, coordinating the main field work and assuring its quality control. The survey was simultaneously conducted in each of the six countries of the Western Balkans. Face-to-face interviews lasting about 30 minutes on average were carried out in local languages.

2.2. Instrument
The instrument was a structured questionnaire. The instrument included a number of variables including consumer's attitudes toward food labels, self-perceived level of information they have about food with health claims, as well as various consumer socio-demographic attributes. Regarding consumers' attitudes toward food labelling, five items addressed the issues of perceived difficulties in interpretation of nutrition information, time needed to read food labels and usefulness of food labels in food choices (the items are listed in table 1). Consumers' attitudes were measured on 5 point Likert scales. In addition, the respondents were asked to judge upon their overall level of information (*self-perceived level of information*) about food with health claims (*In your opinion, how much are you informed about these products*) using 5 point scale (1-not informed at all to 5-fully informed). According to their confidence in the usefulness of health claims when deciding which product to consume (*I find health claims made on product labels useful in helping me decide which product to consume*) they were grouped into *sceptics (disagree)* vs. *believers (agree)*. Finally, consumer socio-demographic questions relevant for this study included their gender and age, level of education, type of settlement (urban vs. rural), and the country they live in.

It should also be noted that at the beginning of an interview with a respondents, she/he were advised on what we assumed under food products with health claims, providing them with the following definition: *Health claims that we see on product packages are claims that link a nutrient to a normal functioning of the body or a specific disease. An example of a health claim would be like these - high in calcium, calcium helps build strong bones, adequate calcium throughout life, as part of a well-balanced diet, may reduce the risk of osteoporosis.* The respondents were also offered to see picture of products with health claims.

2.3. Data analysis
Descriptive statistics, analysis of variance (ANOVA), correlations and binary logistic model (BLM) were used to analyze the data. In the first step we tested the differences in consumers' attitudes toward food labels by their socio-demographic attributes. Additionally, we tested correlations between their attitudes and self-perceived level of information about food with health claims. In the second step, we created a binary logistic model (BLM), an econometric model relevant for testing relationships between a categorical variable with dichotomous outcomes (*dependent variable - Y*) and a number of categorical and/or continuous independent variables (*predictors - X*).

Mathematically, logistic regression is based on the natural logarithm (ln) of an odds ratio, and therefore is well suited for predicting the logit of *Y* from *X* (Peng, Lee & Ingersol, 2002*)*. Logistic regression is expressed by the following equations:

$$\text{Logit}\,(Y) = \ln\,(P/1\text{-}P) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_i X_i$$

$$P\,(Y = X_1, X_2, \ldots X_i) = e^{\,\alpha + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_i X_i}/1 + e^{\,\alpha + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_i X_i}$$

where *P* is probability*, Y* is the dependent variable, α is a constant, $\beta_{1\text{-}i}$ are regression coefficients, and $X_{1\text{-}i}$ are independent factors (*predictors*).

The dependent variable (*Y*) was *believers* in the usefulness of health claims when deciding which product to consume. The independent variables ($X_1\ldots X_i$) were continuous (consumers' attitudes toward health claims and self-perceived level of information about functional food) and dummies (all socio-demographic variables). All calculations were conducted using statistical software package SPSS.

3. RESEARCH FINDINGS

In general, consumers' attitudes toward food labels in WBC were found to be relatively negative with regards to the easiness and time needed to interpret and read food labels. On the other hand, their attitudes were found to be rather positive with regards to the usefulness of food labels when making decisions on which food products to consume (table 1 below).

Table 1: Consumers' attitudes toward food labels in WBC

Statements (S1-S5)	Mean	Sd
S1: The nutrition information on food labels is hard to interpret.	3.30	1.20
S2: Reading food labels takes more time than I can spend.	3.23	1.24
S3: Reading food labels makes it easier to choose foods.	3.46	1.12
S4: When I use food labels, I make better food choices.	3.49	1.25
S5: Using food labels to choose foods is better than just relying on my own knowledge about what is in them.	3.58	1.10

Note: Measured on 5 point Likert scale (1-I do not agree at all, 5-I absolutely agree). Therefore, the higher the mean the higher is the agreement with a statement.

Based on the above, we may argue that while consumers in WBC believe that the information on food labels is hard to interpret and reading these is time consuming, they would still like to have it and rely on it when making their food choices.

However, the differences among WBC consumers' were found according to their home country, gender, age, education and type of settlement. In our study, the Croats showed the least positive attitudes about food labels. Female generally showed more positive attitudes toward food labelling as well as younger consumers (18-39 years of age), consumers holding university degree and urban consumers. The results obtained are showed in the tables 2 and 3 bellow:

Table 2: Differences in consumers' attitudes toward food labels in WBC by country

Statements	Country averages						ANOVA	
	SER	FYROM	MNE	BIH	CRO	SLO	F	Sig.
S1	3.27	3.20	3.18	3.26	3.61	3.28	8.529	0.000*
S2	3.21	3.20	3.10	3.03	3.53	3.30	10.045	0.000*
S3	3.36	3.53	3.48	3.63	3.23	3.54	8.359	0.000*
S4	3.43	3.52	3.53	3.64	3.29	3.49	5.329	0.000*
S5	3.72	3.56	3.61	3.61	3.47	3.51	3.307	0.006**

*Note: * Significant at p≤0.001; ** significant at p≤0.01*

Table 3: Differences in consumers' attitudes toward food labels in WBC by gender, age, education and type of settlement

Criteria	Definitions	Statistics	S1	S2	S3	S4	S5
Gender	Male	Average	3.35	3.24	3.37	3.39	3.51
	Female		3.26	3.21	3.53	3.55	3.63
		F	3.464	0.362	16.072	16.331	9.110
	ANOVA	Sig.	0.063	0.547	0.000*	0.000*	0.003**
Age	18-40	Average	3.12	3.07	3.52	3.54	3.63
	41+		3.44	3.35	3.42	3.44	3.54
		F	54.385	38.635	7.159	6.290	4,450
	ANOVA	Sig.	0.000*	0.000*	0.007**	0.012***	0.035***
Education	University degree	Average	3.09	3.04	3.61	3.62	3.72
	Secondary school		3.29	3.20	3.50	3.52	3.60
	Elementary and less		3.49	3.44	3.25	3.29	3.42
		F	18.002	17.437	18.691	15.330	12.429
	ANOVA	Sig.	0.000*	0.000*	0.000*	0.000*	0.000*
Type of settlement	Urban	Average	3.31	3.22	3.51	3.53	3.63
	Rural		3.28	3.24	3.40	3.42	3.52
		F	0.449	0.161	6.622	7.359	6.932
	ANOVA	Sig.	0.503	0.688	0.010**	0.007**	0.009**

*Note: * Significant at p≤0.001; ** significant at p≤0.01; ***significant at p≤0.05*

The tables above clearly show that consumers' attitudes toward food labels significantly differ according to the criteria taken into consideration. There are significant differences among the countries of the Western Balkans. In particular, consumers in Croatia seem to find nutrition information on food labels mostly hard to interpret and time consuming. On the other hand, Croatian consumers are also least positive about the usefulness of food labels when making food choice. Generally in WBC, significant differences in attitudes toward food labels were found between male and female consumers. Interestingly, while both subgroups are mostly negative regarding the efforts needed for interpretation and reading the information on food labels (statements 1 and 2), female consumers seem to have more positive attitudes related with usefulness of food labels when making food choices (statements 3-5). Our findings related with two separate age cohorts confirmed that younger consumers have generally more positive attitudes toward food labels. In similar manner, consumers with university attainment are significantly less negative regarding the efforts needed to interpret and read the food labels and more positive about its usefulness when making food choices in comparison with their less educated counterparts (secondary school and elementary school or less). Finally, according to their attitudes toward the usefulness of food labels when making food choices urban consumers significantly differ from those living in rural areas. However, these two groups don't differ in terms of their attitudes toward the efforts needed to interpret and read food labels.

Apart from better understanding of consumers' attitudes toward food labels we were also interested to know how well informed they perceived themselves to be about food with health claims Generally, our respondents perceive themselves to be poorly to moderately informed about products with health claims (average score 2.92). Their self-perceived level of information about food with health claims was found to significantly correlate with their attitudes toward food labels (table 4).

Table 4: Correlation of self-perceived level of information about food with health claims and consumers' attitudes

	Informed	S1	S2	S3	S4	S5
Average	2.92	3.30	3.23	3.46	3.49	3.58
Pearson Correlation	1	-0.187	-0.202	0.306	0.311	0.208
Sig.		0.000*	0.000*	0.000*	0.000*	0.000*

*Note: * Significant at p≤0.001*

The interpretation of the results would suggest that the better informed the consumers perceive themselves, the less negative are their attitudes toward difficulties in interpretation of information on food labels and time needed to read it. In similar manner, the higher the self-perceived level of information about food with health claims, the more positive their attitudes are toward the usefulness of food labels when making food choices.

In the second step, we created an econometric model (BLM) to test the most important factors influencing consumers' confidence that health claims on food labels are useful when making decisions on which food products to consume. The dependent variable (Y) in the model represented so called *believers* (69.65% of the overall sample) in the usefulness of health claims. The factors ($X_1…X_i$) included consumers' attitudes toward food labels and self-perceived level of

information about food with health claims (continuous variables) and country, gender, age, education and type of settlement (dummies). The model was found satisfactory, with adequate measures of the model's goodness-of-fit (i.e. Pseudo R Square = Nagelkerke R Square =0.228; Hosmer and Lemeshow Test not significant, c statistic = 76%). Self-perceived level of information about food with health claims was found to be the strongest influencing factor and/or best predictor of consumers' confidence in usefulness of health claims when making food choices (table 5).

Table 5: Factors influencing consumers' confidence in the usefulness of health claims when making food choices

Factors	Binary logistic model			
	B	Wald	Sig.	Odds ratios
Self-perceived level of information about food with health claims	0.471	74.688	0.000*	1.602
The nutrition information on food labels is hard to interpret.	0.003	0.004	0.947	1.003
Reading food labels takes more time than I can spend.	-0.111	5.402	0.020***	0.895
Reading food labels makes it easier to choose foods.	0.248	16.033	0.000*	1.281
When I use food labels, I make better food choices.	0.237	13.125	0.000*	1.267
Using food labels to choose foods is better than just relying…	0.274	27.955	0.000*	1.315
Gender	-0.064	0.493	0.483	0.938
Age	0.026	0.075	0.785	1.026
Education		2.732	0.255	
University	-0.249	2.711	0.100	0.779
Secondary school	-0.134	1.274	0.259	0.874
Type of settlement	0.066	0.477	0.490	1.068
Country		6.116	0.295	
SER	0.187	1.391	0.238	1.205
FYROM	0.070	0.198	0.657	1.073
MNE	0.102	0.427	0.514	1.108
BIH	0.030	0.037	0.848	1.031
CRO	-0.179	1.310	0.252	0.836
Constant	-2.494	57.133	0.000	0.083

Note: N=3085, included in analysis – 2984 (missing cases 101), *believers* = 2149, *sceptics* = 835. Method applied – Enter. Cox and Snell R Square = 0.158, Nagelkerke R Square =0.228, Hosmer and Lemeshow Test = 0.218, c statistic = 76 (cut value is 500).
* Significant at p≤0.001; ***significant at 0.05

The higher the self-perceived level of information about food with health claims, the more probable is that the consumers will be confident about the usefulness of health claims on product labels when making food choices. In addition to it, consumers' attitudes toward food labels were also found to be significant factors. The only exception was *the nutrition information on food labels is hard to interpret*, which was not found to be the factor that influences consumers' confidence in the usefulness of health claims when making food choices. The attitudes related with the time needed to read nutrition labels were found to be influencing factor. Therefore, we may argue that the consumers who find reading food labels to be a time consuming experience will most probably be less confident (more sceptical) about the usefulness of health claims on food labels when making food choices. On the other hand, consumers who think that reading food labels makes it easier to choose food, that when reading food labels they make better food choices and that reading them is better than just relying on one's own knowledge will more probably find health claims on product labels useful when making food choices. Finally, in our study consumer socio-demographic characteristics and the country they live in were not found significant factors influencing consumers' confidence in usefulness of health claims when making product choices.

4. CONCLUSIONS AND IMPLICATIONS

Consumers' attitudes toward food labels in WBC have been found relatively negative with regards to the efforts needed to interpret and time needed to read them. It is equally true for male and female consumers as well as those living in urban and rural areas. However, it is even more evident for the older and less educated consumers. Such findings certainly imply the need to provide food labels which are easier for interpretation and requiring less time to read. It may be achieved with further simplification of information and claims provided on food labels. Such a simplification might be verbal but may also include visualization. However, such a simplification might also bring to provision of misleading information and therefore *not lead to better diet choices* (Williams, 2006). Therefore, making simpler food labels requires special attention of both food marketers who want to be socially responsible and of public health policy makers.

On the other hand, the consumers in WBC seem to be positive about the usefulness of food labelling, which is in line with the findings in other studies conducted in the developed countries (e.g. Peters-Texeira, Badrie, 2005). Moreover, the significant differences found by socio-demographic variables are similar to those found in the studies conducted in

developed countries (e.g. Rimal, 2005). In WBC, positive attitudes toward the usefulness of food labels as well as their negative attitudes related with the efforts to interpret and read those labels strongly correlate with how much they perceive themselves to be informed about food with health claims. In general, they find themselves not very much informed about this type of food.

On the positive side for the food marketers is certainly our finding that the majority of consumers' expressed their confidence in the usefulness of health claims on product labels when deciding which product to consume (69.65%). Their confidence in the usefulness of health claims on product labels when deciding which product to consume is mostly influenced by their self-perceived level of information on food with health claims, but also with their attitudes toward food labels. This implies the need for undertaking actions toward better informing and educating consumers on healthy benefits of food and the specific food category that is providing such benefits. Such actions are at the interest of both food marketers and public policy makers. In addition, the consumers must be made even more aware of the usefulness of food labels when making food choices. Making them better aware of the usefulness of health claims, together with using simplified food labels might bring to more positive attitudes toward food labels.

The study presented here has several limitations, which should be taken into consideration in further research. Firstly, the study only addresses attitudes toward food labelling in general. It doesn't provide deeper insight into how consumers process the information on food labels, how much it influences their consumption/purchase intentions and or their brand attitudes. In addition, it doesn't provide any information on consumers preferences related with any particular information they would like to have on food labels. Therefore, the study presented here should be considered a pioneering attempt to draw attention to the issue of food labelling in WBC. In future, more specific research studies would be needed to improve food labelling and its usage for making better food choices which would simultaneously lead to better positioning of food marketers on the local markets.

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