Agronomy Research **14**(3), 896–906, 2016

Quality labels in Estonian food market. Do the labels matter?

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Abstract. The current study investigates the consumers' perception of quality labels for Estonian food. Based on empirical findings from a representative population survey, this paper analyzes and discusses consumers' attitudes and the behavioural consequences towards two quality labels and related campaigns: *the best Estonian foodstuff and the sign of national flag.* The representative survey was fielded annually, at first in 2009 following in the years 2011–2015. Every wave comprises the answers of 1,000 Estonian inhabitants. Employing the same methodology over the time the current study achieves an understanding of development in consumer awareness the quality labels and the impact of those labels on the purchasing behaviour. The paper enables to estimate the effectiveness of launching quality labels for foodstuffs and concludes that the labels serve their purposes.

Key words: quality food labels, consumer behaviour, hierarchy-of-effects (HOE), consumer decision-making.

INTRODUCTION

Both in the European Union in general, and as well the Estonian producers, can incorporate a variety of food quality labels. Labels may provide information on the origin of the food or the quality of the product, refer to the long tradition-based production method, and indicate the specific features of the product. Such labels have a potential direct impact on consumer decision-making (Verbeke, 2005) and in turn, food producers discuss whether a use of the labels would be a useful tool in their overall marketing mix (Grunert & Aachmann, 2016).

Past research has examined how the food quality labels affect consumers. A literature review compiled by Grunert & Aachmann (2016) identifies 35 studies, published between 1999–2014 focuing on topic how EU promotes food quality labels. Based on a hierarchy of effects framework Grunert & Aachmann investigate what impact the labels have on consumer purchasing intention. They suggest that quality labels can have the function only to the extent that consumers are aware of them, understand them and use them in their decision-making. There is a solid body of research concerning region-of-origin labeling (Botonaki & Tsakiridou, 2004; Verbeke & Roosen, 2009; Deselnieu et al., 2013; Bryla, 2015; Lorenz et al., 2015) and labels of organic foods (Krystallis et al., 2006; Hughner et al., 2007; Larceneux et al., 2012; Jannsen & Hamm, 2014; Müller & Gaus, 2015).

On the other hand, there is a lack of the studies examining how quickly quality labels launched in the food market will achieve awareness, understanding, and behavioral consequence among consumers. Such studies would enable to determine whether the quality labels fulfill its' objectives of strengthening the domestic food sector. This study aims to fill the research gap in literature by taking the retrospective view of the consumers' responses concerning quality labels in Estonian food market focusing on two of them – *the best Estonian foodstuff* and the *sign of national flag.*

The quality label *the best Estonian foodstuff* refers to a new Estonian product that has passed and is awarded in the annual competition in its category. The product has to be manufactured in Estonia. The competition aims to encourage the food industry to carry out product development, introduce new foods to the consumers and retailers, and develop a positive attitude to food processing and food. Such competitions have been held since 1994. (Estonian Food Industry Association, 2016)

In June 2009, began the Estonian Food Industry Association in cooperation with the number the retail food chains, the campaigns intended to provide clear information to consumers of food products in the domestic origin. National flag sign in a product's price tag indicates that the Estonian food industry makes this product for people who appreciate the Estonian cuisine traditions and taste. The food industries that join the campaign for domestic products can be identified by the national flag label in the store price tags. With the sign of national flag, is labelled the products with the country origin, either produced or manufactured in Estonia. (Ministry of Rural Affairs, 2016) Thus, the aim of the aforementioned campaign is to meet the consumers' expectation to get accurate information concerning the domestic origin of food.

Since September 2009 began the Estonian Food Industry Association to measure the effects of those two labels (see Fig. 1) on consumer behaviour. The awareness and attitude, likewise the behavioural consequences are examined annually.

The authors of the current study utilise the data of the nationwide surveys and use the hierarchy-of-effects (HOE) framework to examine the effectiveness of those two quality labels in Estonian food market.

Figure 1. The labels of *national flag sign* and the *best Estonian foodstuff.*

HOE model explains a mental process that consumers go through while forming awareness, attitudes and making buying decisions. The information moves through a cognitive (learning, knowing), affective (thinking, feeling), and conative (intending, doing) sequence steps (Verbeke, 2005).

In HOE model, the consumer begins with no awareness of the brand (Smith et al., 2008) The following stage of consumer response involves learning and remembering the cues made in the marketing communications (Weilbacher, 2001). Awareness of the quality labels results from perception. Referring Grunert & Aachmann (2016) awareness can be regarded as a proxy of perception. Creating awareness through attention and interest is the key goal of marketing communications in HOE model. Once the consumers have the knowledge about quality labels, then they can develop the liking and preference. The affective component of the model contains the feelings and emotions, attitudes and attitudinal changes (Clow & Baack, 2004). The final stage in HOE model is the conation or purchasing intention stage (Smith et al., 2008)

There has been a long debate in behavioural sciences about the sequence and inter-distance of these hierarchical steps. For instance, sometimes the consumers first make a purchase following by develop knowledge, liking, and preference (Weilbacher, 2001; Clow & Baack, 2004; Verbeke, 2005). We considered that HOE model with the cognitive, affective and conative components fitted the best into the framework of the current study. The sequence and inter-distance of these hierarchical steps is out of scope of current study. The applying HOE model principles enable us to answer the research questions how the awareness of quality labels has changed over the time and what impacts have the labels to the purchasing intention.

MATERIAL AND METHODS

This study utilizes data from a probability-based representative survey carried out by the research agency Turu-uuringute AS (Estonian Surveys Ltd.). A representative sample from a population stands for a scaled-down version of the entire population, where all different characteristics of the population are presented (Grafström & Schelin, 2014). All population members have a probability $p > 0$ of being in the sample (Aaker et al., 2004).

Sampling procedure and study design

Respondents were recruited on a random sample basis to ensure the proportional representation of all Estonian counties and habitat types in the sample. The territorial model of the sample has been compiled by the population statistics database of the Estonian Statistical Office. In the first stage of random sampling, 100 sampling points were determined all over Estonia and the second step then yielded particular interviewees at every sampling point. Address selection relied on the source address method where every interviewer is given a randomly selected address to conduct the first interview. The interviewer will then move on according to a specific interval to ensure the randomness of domiciles in the sample. The respondent selection was subject to the so-called youngest male rule where the interviewer first requests to speak with the most immature man (at least 17 years old) currently at home. If no men are at home, the youngest female is the next preferred candidate. This sampling method ensures an increased probability of representation for those categories least likely to be found at home (predominantly young respondents or men). Aforementioned is done to provide the better coverage of genders and different age groups in the sample. The interviews were conducted in the respondents' homes in Estonian and Russian.

Due to the representative sample regarding major demographic criteria, the results can be extrapolated to the universe that is, all the Estonian population considering the margin of error.

Table 1 depicts the period when the nationwide surveys were conducted, the number of respondents, age of target group, and data collection methods. In 2014, Turu-uuringute AS renewed the data collection method introducing the computer-assisted personal interviews (CAPI) instead of previous paper and pencil personal interviews (PAPI). In the same year, the agency changed the scope of age the respondents, withdrawing the upper age limit 74 years.

Survey instrument

Asking awareness, dichotomous yes/no measures were used. Measuring the attitude toward the labels either single or multiple choice nominal scales were used. Impact on decision making was measured either by 4-points Likert scale or by multiple choice scale. In current study, the survey instrument and collected data are used post-hoc. That is, the instrument is not created for specific scientific purpose but based on the monitoring needs of Estonian Food Industry Association.

Table 1. Study methodology

Time	n = respondents	Age	Data collection
2009 September	1,004	15–74	PAPI
2011 August	1,000	15–74	PAPI
2012 September	1,001	15–74	PAPI
2013 September	998	15–74	PAPI
2014 September	1,007	15+	CAPI
2015 September	1,003	15+	CAPI

Statistical analyses

Analyses were conducted with SPSS version 21.0. In the analysis we have different type data: qualitative and quantitative. Descriptive statistics such as frequency and percentage distributions as well as parameters describing location and standard deviation were used in the analysis. Some statistical tests require that our data are normally distributed and therefore we use the Shapiro-Wilk test to check if this assumption is violated. The p-value is 0.000. We can't reject the alternative hypothesis and conclude that the data comes from a not normal distribution. As the dimension of data did not meet the assumption of normality, we used the Mann–Whitney, Chi square and Kruskal–Wallis tests to examine associations.

RESULTS AND DISCUSSION

Cognititive stage – awareness

Implementing the HOE model to the context of the current study, the consumers begin with no awareness of the quality labels. Marketing communications create awareness through attention and interest.

Fig. 2 presents how the consumers have perceived the presence of the label *the national flag* on price tags when shopping.

Based on Fig. 2 above, we conclude relating the linear regression that there is on average the increase in awareness of 9 every year. In 2009, after launching the label the awareness was 34 while on last year already 81.

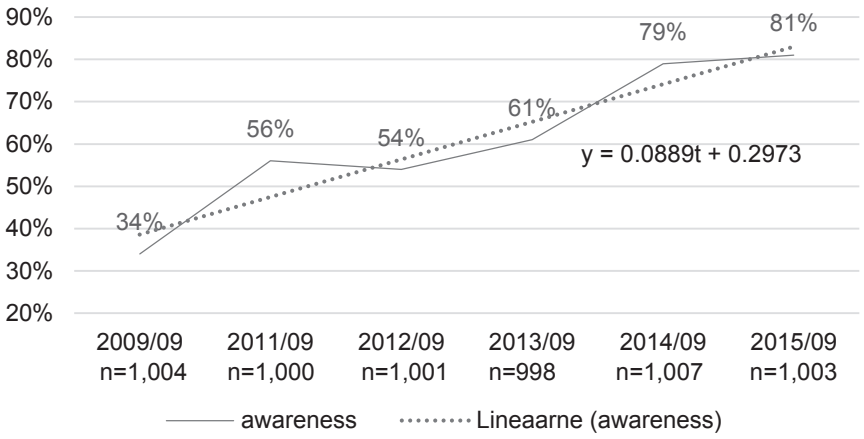

Figure 2. The dynamics of awareness the quality label (the sign of national flag) from launching to hitherto.

Fig. 3 compares in the run of last five years how the consumers have perceived the presence of the label the *best Estonian foodstuff* and the label *the national flag* on price tags when shopping. The awareness had been during the first three years when surveys carried out quite similar. The results of the studies in 2014 and 2015 show the increasing awareness.

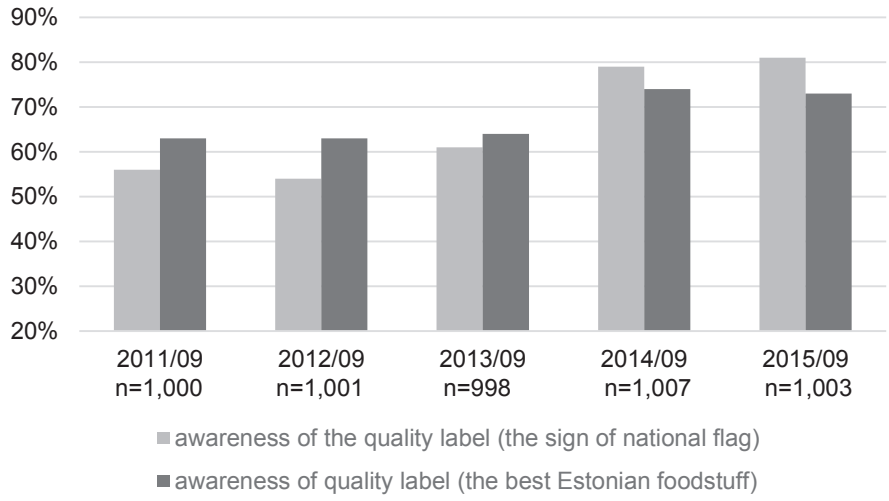

Figure 3. The dynamics of awareness the quality labels.

Compared to results the surveys of awareness European food quality certification schemes such as protected destination of origin (PDO, awareness 68%), protected geographical indication (PGI, awareness 36%), and traditional speciality guaranteed (TSG, awareness 25%) carried out in European countries (Verbeke et al. 2012) the awareness of local labels in Estonia is much higher when it comes to *national flag sign* and somewhat higher when it is the label *best Estonian foodstuff*. On the other hand, that comparison is not entirely correct because the characteristics of European food quality certification schemes mentioned above differ.

That is, PDO covers agricultural products and foodstuffs that are produced, processed, and prepared in a given geographical area while PGI refers to agricultural products and foodstuffs closely linked to the geographical area. Both schemes promoted by EU aim to protect product names from misuse and imitation. Estonian food quality labels *national flag sign* and *the best Estonian foodstuff*, in turn, are intended to propagate consuming and purchasing the food of Estonian origin. Common to PDO, PGI, and Estonian labels is that they help the consumers in the decision making.

The study by Verbeke and others (2012) analyses European consumers' awareness and determinants of use of PDO, PGI and TSG labels in six European countries (Italy, Spain, France, Belgium, Norway and Poland) using data from a cross-sectional survey with 4,828 participants. It is interesting to mention that awareness is higher among men and people aged above 50 years while the both quality labels in Estonia over the years are better known for women and individuals less than 50 years old.

Table 2 presents the results of analyzes related to awareness of quality label *the best Estonian foodstuff* and presents the socio-demographical variables of the respondents.

Thus, we can report a statistically highly significant difference between all background variables and awareness of the label *the best Estonian foodstuff.* The level of statistical significance was set at p-value is 0.05. Exception is the place of residence.

Affective stage – attitude

The affective component of the HOE model contains the attitudes and feelings. Beginning from the year 2013 the question 'Is the label *national flag sign* important to you?' was asked. When in 2013 (54.8%) respondents said that this label helped them recognize the food manufactured or produced in Estonia, then in the next 2014 year has the rate increased to 69.8% being in 2015 similar (57.5%) to the year 2013. Thus, we can conclude that quality label serves its purpose – for more than half respondents the label is relevant. On the other side, such relevance can explain with a normative preference for regional products, related to the concept of ethnocentrism (Lorenz et al. 2015).

26% of respondents in 2013, 14.5% in 2014, and 21.2% in 2015 reported that their habits and preferences are more important than the flag sign in price tags. Importance was measured by single choice nominal scale.

Tabel 2. Awareness of the quality label *the best Estonian foodstuff* between 2011 and 2013 by demography (%). *P-value used: Chi square association test

Variable	Awareness 2011		p value*	Awareness 2012		p value*	Awareness 2013		p value*
	Yes	No		Yes	No		Yes	No	
Age 15–24	15.0	17.3	0.000	12.9	13.9	0.000	11.9	11.3	0.000
25–34	20.4	12.5		22.7	11.0		20.0	11.0	
35–49	29.8	16.7		28.5	15.7		29.4	19.9	
50–64	25.0	33.4		24.5	37.1		30.0	36.8	
65–74	9.8	20.1		11.4	22.3		8.8	21.0	
Gender female	61.6	49.5	0.000	59.4	47.2	0.000	59.8	43.0	0.000
male	38.4	50.5		40.6	52.8		40.2	57.0	
Household monthly net income									
kuni 300 €	9.6	22.3	0.000	12.7	16.9	0.001	7.7	13.9	0.000
301–400 €	9.2	13.5		15.5	20.5		8.9	11.4	
401–500 €	6.4	11.2		16.3	17.5		5.3	10.4	
501–800 €	24.0	30.7		19.6	12.8		20.4	26.2	
801–1.300 €	30.5	17.1		12.7	6.5		30.2	25.2	
1.301+ €	20.2	5.2		23.2	25.8		27.4	12.9	
Education									
Lower secondary	16.2	28.0	0.000	11.0	22.0	0.000	9.2	16.5	0.000
Upper secondary	53.8	57.1		60.1	59.6		60.5	65.3	
Higher education	30.0	14.9		29.0	18.4		30.3	18.2	
Social status									
Entrepreneur. manager	17.6	6.7	0.000	19.0	10.4	0.000	23.3	23.3	0.000
Office worker	28.1	16.1		23.0	12.8		26.9	26.9	
Tradesman	14.2	20.1		17.1	18.4		13.8	13.8	
Other employed	5.1	7.9		3.7	4.5		5.6	5.6	
Student	7.2	8.8		7.9	9.8		6.4	6.4	
Retired person	15.4	29.5		17.6	31.5		14.2	14.2	
Language Estonian	82.4	52.9	0.000	82.8	58.8	0.000	79.8	44.3	0.000
Other	17.6	47.1		17.2	41.2		20.2	55.7	
Residence of living									
Capital	31.2	27.1	0.006	30.3	30.3	0.157	31.7	27.8	0.186
City	16.5	24.6		20.8	19.3		15.9	21.6	
Regional center	30.4	32.2		26.9	32.9		18.6	18.2	
Country	21.8	16.1		22.1	17.5		33.8	32.3	

Measuring the attitude towards label *the best Estonian foodstuff* the multiple choice scale was used. The results are presented in Fig. 4.

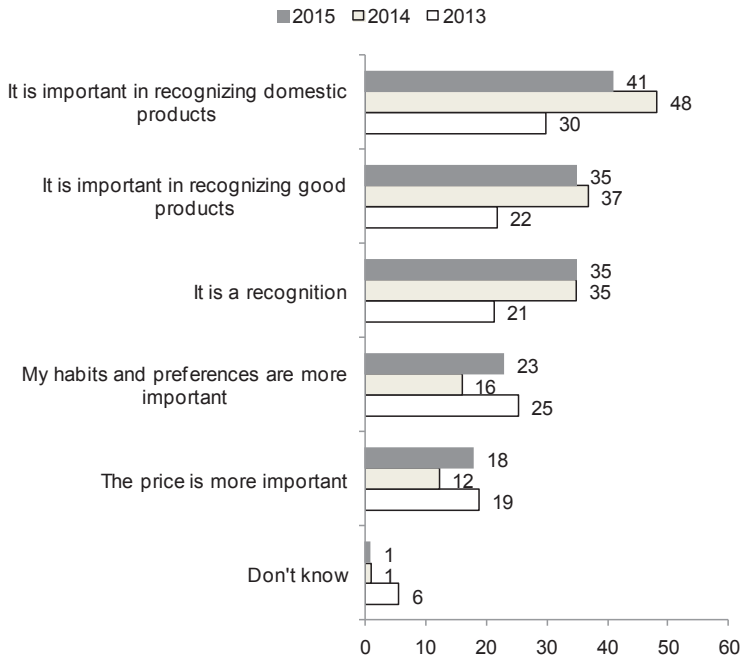

Figure 4. Importance the label *the best Estonian foodstuff*.

Comparing the results of three-year run can see that in last two year the importance of quality label has increased. Roughly saying almost a half part of respondents agree that the label is important in recognizing domestic foodstuff. One-third of respondents agree that those products represent an excellent quality, and one-third understands the label being the recognition.

Conative stage - purchasing intention

Next we show what impact has food quality label on consumer choices, in other words, does it influence the purchasing decision. In the HOE model, the last stage refers to the consumers' decision making.

The question asked was worded as follows: 'Does the label the best Estonian foodstuff have an impact on your buying decision?' A 4-point, Likert-type measurement scale was used, where 1 referred to 'No', 2 'rather no', 3 'rather yes', and 4 'yes'.

For analyzing the data set Kruskal-Wallis Test p-value was applied. The results (Table 3) provide the confirmation that the label has impact on buying decision when it comes to gender, age (in 2011 and 2013), education, social status (in 2011), place of residence (divided into the following variables: capital, cities and county centers, other town and rural), and region. Languages spoken in Estonia are Estonian and Russian. Language had an impact on the buying decision in 2013.

No significant differences in the purchasing intentions were found between people with different household monthly net income as well the social status in 2012 and 2013.

Table 3. Determinants of consumer's bying decision of the quality label (the best Estonian foodstuff)

	p-value* 2011	p-value * 2012	p-value* 2013
Age	**0.003**	0.372	**0.013**
Gender	**0.045**	**0.000**	**0.006**
Household monthly net income	0.167	0.076	0.524
Education	**0.000**	**0.006**	**0.000**
Social status	**0.000**	0.322	0.251
Place of residence	**0.00**	**0.002**	**0.041**
Language	0.362	0.071	**0.048**
Region	**0.00**	**0.001**	**0.029**

Note: * Kruskall-Wallis test was used.

Female consumers were significantly more to make a decision buying the product with the quality label. Furthermore, consumers with higher education were significantly associated with the purchasing intentions on products with the quality label.

CONCLUSIONS

In the line with the study by Grunert & Aachemann (2016) presenting the reviews of 35 published research on how EU quality labels affect consumers, we highlight that quality labels can have the function only to the extent that consumers are aware of them, understand them and use them in their decision-making. Employing the same methodology over the time the current study achieves an understanding of development in consumer awareness regarding two Estonian food quality labels and their impact on the purchasing behaviour. Applying the HOE framework as the analytical model we come up with the following conclusions:

First, the general level of awareness of Estonian food quality labels is relatively high; suggesting that mainly consumers will perceive the presence of the label.

Second, beginning the year 2009 while the label *national flag sign* was launched its awareness increased from 34% to 81%. Thus, on average the increase in awareness has been near 9% every year.

Third, we can report a statistically highly significant difference between respondents' background variable (such as gender, age, household monthly net income, social status, and language) and awareness of the label *the best Estonian foodstuff.*

Fourth, quality label national flag sign serves its purpose – for more than half respondents the label is relevant. Moreover, our work provides evidence for manufacturers' and marketers' expectation that quality label *the best Estonian foodstuff* indluences consumers' purchasing decisions.

The authors of this study address the scales used for the survey instrument be the subject to statistical limitations. For instance, the attitudes towards quality labels were measured either by single or multiple choice nominal scales. It is a reason the reporting of results in the basic level. Furthermore, the survey started from 2009 is monitoring via the tracking studies. However, the survey instrument is not consistent. That is, the

questions and variables have been changed, removed, and added. Thus, comparability of the results between years suffers.

It would be desirable to investigate more the role of quality labels in actual decision-making. Additional studies are suggested how ethnocentrism will influence the perception of quality labels and particularly their purchasing behaviour.

ACKNOWLEDGEMENTS. The survey data utilized in this paper has been commissioned by the Estonian Food Industry Association.

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