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A STUDY OF CONSUMERS' ATTITUDES TOWARDS ENVIRONMENTALLY SAFE FOOD: A CASE STUDY FROM ST. PETERSBURG

1. Introduction

Eco-labeling of products is a voluntary tool, which informs customers about environmental aspects of production. As international experience shows, the most widespread form of eco-labeling is labeling of final products, in particular, consumer products. There are special rules and schemes for the voluntary eco-labeling of products in different countries, for example, "Blue Angel" (Germany), "White Swan" (Nordic countries), "Green Seal" (The USA) and the European Union's eco-label "Euroflower", among others. In the Russian Federation eco-labeling has only recently been implemented. For example, in 2004 a special eco-label, the "Leaf of Life", was registered in St. Petersburg. Several methods and schemes for the eco-labeling of foodstuffs have been implemented in the city. The eco-labeling project "Leaf of Life" was introduced by a non-commercial organization, the St. Petersburg Ecological Union, in cooperation with the St. Petersburg State University of Refrigeration and Food Technology, together with support from the St. Petersburg City Administration and Chamber of Industry and Commerce.

A lack of information available to consumers and misunderstanding of the purpose of eco-labels are among the most serious hurdles to the introduction of eco-labeling.

The aim of this study is to reveal the attitude of St. Petersburg citizens towards ecologically safe foodstuffs and the level at which they understand and recognize eco-labels.

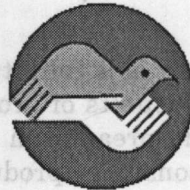
This article presents the results of a sociological survey made by the St. Petersburg Ecological Union and Agency of Social Information carried out in January 2005. Also, we present results of our own research related to the attitude of students from St. Petersburg universities.

2. Eco-labeling schemes and eco-labels in St. Petersburg

As a process, eco-labeling aims at giving the opportunity to consumers of buying products which have a minimally negative effect on the environment. Eco-labeling is supposed to oblige producers to continuously improve the environmental safety and cleanliness of their products. Eco-labeling can be considered to be a way for a producer to create a "green image" and thus obtain a competitive advantage on the market. Eco-labels on packaging or a product are necessary to inform consumers about the ecological properties of a product. The most common eco-labels in St. Petersburg are presented in Fig. 1.



Blue Drop Quality The Center
of Center Quality Control
of the St. Petersburg Administration



Ecological Certificate
of Conformity International
Ecological Fund, Moscow



Certificate of Federal
Certification Moscow



Leaf of Life St. Petersburg
Ecological Union district



Healthy Nutrition
Agricultural Committee
of the Leningradskaya



St. Petersburg Quality Brand
– St. Petersburg



Center of Quality Control of the
St. Petersburg Administration

Fig. 1. Eco-labels common in St. Petersburg

Table 1. Standards of ISO 14020 Adopted in the Russian Federation

International Standard	Name	Status in the Russian Federation
ISO 14020:2000	Environmental labels and declarations – General principles	Adopted
ISO 14021:1999	Environmental labels and declarations – Self-declared environmental claims (Type II environmental labeling)	Adopted
ISO 14024:1999	Environmental labels and declarations – Type I environmental labeling – Principles and procedures	Adopted
ISO 14025:2000	Environmental labels and declarations – Type III environmental declarations	

Source: GOST R ISO 14020, 1999; GOST R ISO 14021, 1999; GOST R ISO 14024, 1999.

These labels have been developed and registered by governmental and non-commercial organizations from St. Petersburg and Moscow. Each of the labels is appropriate not only to foodstuffs, but also to other consumer goods. The procedures for eco-labeling were developed on the normative basis of laws and international standards, which are currently in force in the Russian Federation. This normative base consists of the following Acts of the Russian Federation: “On Technical Regulation” [2002], “On the Defense of Consumer Rights” [1992], “On the Quality and Safety of Food Products” [1992] and ISO standards (Table1) [GOST R ISO 14020, 1999; GOST R ISO 14021, 1999; GOST R ISO 14024, 1999].

In general, the current schemes of eco-labeling are of Type II, except the “Leaf of Life” eco-label, which is of Type I [Sergienko and Ron, 2004, 202]. However, despite a well enough developed legal base, the application of eco-labels in St.Petersburg is not yet widespread. Labels have been put on sausages and other meat products, drinking water, bakery goods, fruits and vegetables, as well as domestic filters for cleaning air. Because of growing interest in environmental aspects from consumers, some Russian producers have put eco-labels on the packaging of products without the corresponding certification, for example “BIO” or “Environmentally Clean Product” and the prices for such products are unreasonably high. It is necessary to organize schemes and procedures for the proper eco-labeling of foodstuffs, in order to protect consumer rights and provide good quality and environmentally safe products. The degree of consumer trust in eco-labels depends on the reliability of the information used in eco-labeling procedures. The increase in consumer interest and readiness to pay extra for environmentally safe products and services means that the way of supplying information to consumers should be well thought out.

It is likely that producers will attract the attention of Russian consumers to «green products», if they can simultaneously guarantee conformity to quality standards and the ecological friendliness of production, corresponding to a decrease in its negative influence on the environment. Thus, they could well protect consumer rights to useful, quality and environmentally safe products.

3. The results of the sociological research of the St. Petersburg Ecological Union and Agency of Social Information

In January 2005 the St. Petersburg Ecological Union in cooperation with the Agency of Social Information carried out research on consumer preferences regarding environmentally safe production. The method used was street interview. 1 700 respondents were interviewed. The purpose of the research was to reveal consumers' attitudes towards environmentally safe products. Also, the level of knowledge of citizens in this sphere was investigated. The main aims were to reveal the level of understanding of the term «environmentally safe product» by citizens of St. Petersburg, their motivation to purchase such products and their level of understanding of the principle of voluntary ecological certification and eco-labeling, as well as consumers' attitudes towards eco-labeling.

About 56% of respondents answered the question «Do you know what the term environmentally safe product means?» by stating that «production is safe for people», 32% of respondents answered that «production includes only natural components» and 12% of respondents answered, that «production leads to a minimally negative impact on the environment» [Anisimova et al., 2006, 6].

Nearly half of the respondents from St. Petersburg (48%) do not know what the term «eco-labeling of a product» means. 26% of respondents are not sure that they correctly understand the purpose of eco-labeling and only 26% are sure that they understand this term correctly [Anisimova et al., 2006, 6].

A large minority of respondents (43.6%) said that they had not encountered any eco-labels for environmentally safe products. In the city the most widespread eco-label, as well as most often recognized by citizens, is the «Leaf of Life» eco-label (25%). This label raises the level of trust of many consumers in the quality of labeled goods (40.9% of respondents). (Table 2).

Table 2. Respondents' Recognition of Eco-labeling

	Which of these labels have you encountered on products?	Which of these labels assure you of the quality of a product?
	25.0%	40.9%
	15.7%	19.9%
	14.1%	13.1%
	11.7%	10.6%
	7.4%	7.3%
None	43.6%	19.1%

Source: Anisimova et al., 2006, 14.

Most often, interviewees stated that information regarding the contents of goods is a significant factor in determining the products they purchase (73.6% of respondents). 52.3% of respondents consider the price factor to be significant. Product advertising in the mass-media and streets is least commonly stated to be a significant factor influencing the choice of products (12.1%) (Table 3).

The vast majority of respondents (85%) are willing to accept only a minimal increase in the price of environmentally safe products (up to 10%) (Table 4).

Table 3. The Most Significant Factors Determining the Choice of Products

Factor Determining the Choice of Products	% of respondents
Information on the contents	73.6
Convenience of consumption	55.9
Price	52.3
An eco-label on the packaging certifying the safety of goods for health and environment	40.9
Appearance of packaging	32.9
Popularity of a brand	24.7
Awards from competitions, exhibitions, trade marks on packaging	17.9
Advertising in the mass-media and streets	12.1

Source: Anisimova et al., 2006, 15.

Table 4. Willingness of Respondents to Pay Extra for Environmentally Safe Products

Willingness to buy environmentally safe products	% of respondents
– if the price is 10% higher	85
– if the price is 20% higher	49
– if the price is 30% higher	28

Source: Anisimova et al., 2006, 9.

It appears from the results presented that the population of St. Petersburg is interested in environmentally safe and healthy foodstuffs. However, a lack of understanding of eco-labels and low willingness to pay extra for such products will probably constrain demand and, hence, the expansion of such products on the St. Petersburg market.

4. A study of the attitude of students from St. Petersburg universities towards the eco-labeling of foodstuffs

The study on the attitude of students from St. Petersburg universities towards the eco-labeling of foodstuffs was carried out in December 2005. Students of St. Petersburg universities between 17 and 25 years old were targeted. 266 respondents were interviewed (women – 141, men – 125). The socio-demographic characteristics of the respondents are presented in Table 5.

Table 5. The Socio-demographic Characteristics of Respondents

Characteristics	Value
1. Age	17-25
2. Sex	Male – 45% Female – 55%
3. Education	University Students
4. The level of income of the respondent's family (monthly per person in rubles)	
up to 5 000	25%
from 5 000 to 10 000	45%
from 10 000 to 15 000	19%
from 15 000 to 20 000	6%
above 20 000	5%

Source: Authors' own research.

The research methods included:

– A review of market research already carried out: data gathering from external sources;

– Market research in the field: gathering information by means of a survey on the basis of a specially prepared questionnaire.

The aim of this study was to reveal the level of understanding of eco-labels, to analyze attitudes towards genetically-modified products and biologically active additives and also to determine the willingness of respondents to pay extra for environmentally safe products.

During the study it was necessary to test the following hypotheses:

– the students are not willing to pay extra for environmentally safe products;

– the group of students, who are most willing to pay more for environmentally safe foodstuffs, are girls from families with a high level of income;

– the majority of students pay attention to eco-labels on foodstuffs;

– the majority of students recognize eco-labels on foodstuffs;

– students' attitudes towards genetically-modified products are negative, regardless of sex and level of income;

– students do not consider biologically active additives to be harmful, regardless of sex and level of income.

Almost half the respondents (46%) state that a price increase of 5% is the greatest acceptable. About 9% of respondents are willing to buy environmentally safe products only if their price is the same as non-labeled products. It is important to note that only a fraction of consumers (2% of the total number of respondents) are willing to buy such products at

any price. Thus, the majority of respondents consider the price factor as a significant factor in determining their choice of product (Table 6).

Table 6. Willingness to pay extra for eco-labeled goods

What is the highest acceptable surcharge you are willing to pay for eco-labeled goods?	% of respondents
5%	46
10%	36
20%	6
40%	1
any	2
no surcharge is acceptable	9

Source: Authors' own research.

The results obtained show that for students from families earning up to 15 000 rubles a month per person (*i.e.* students from families with low- and medium-sized incomes), the level of income does not influence their willingness to pay more for environmentally safe products. The vast majority of consumers in this group are not willing to pay a surcharge of more than 10%. A significant proportion of these students are willing to buy eco-labeled goods only if there is no surcharge (9%). A very small group is willing to accept at most a 40% surcharge, regardless of their level of income (1% of respondents). A similar proportion is willing to accept any surcharge (2% of respondents) (Fig. 1).

Despite being well-off, students from families with a level of income exceeding 15 000 rubles a month per person are most commonly only

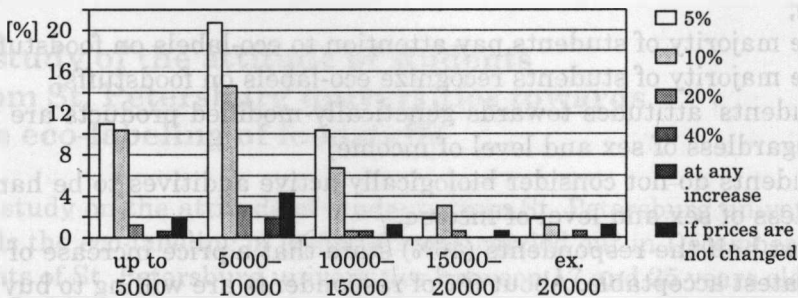


Fig. 1. Maximum Acceptable Surcharge on Eco-labeled Goods Depending on Level of Income (in % of income group)

Source: authors' own research.

willing to accept a surcharge of 5% (37% of respondents). The proportion of students in this group willing to pay a surcharge of up to 10% is the same as the proportion not willing to pay any surcharge (25%). 13% of respondents are willing to pay a surcharge of up to 40%.

Fig. 2 shows that male respondents are less willing to pay a surcharge on environmentally safe products than female respondents. Thus, the hypothesis that females are willing to pay more for environmentally safe goods than male respondents has been confirmed. Many male students are not willing to pay any surcharge for environmentally safe products.

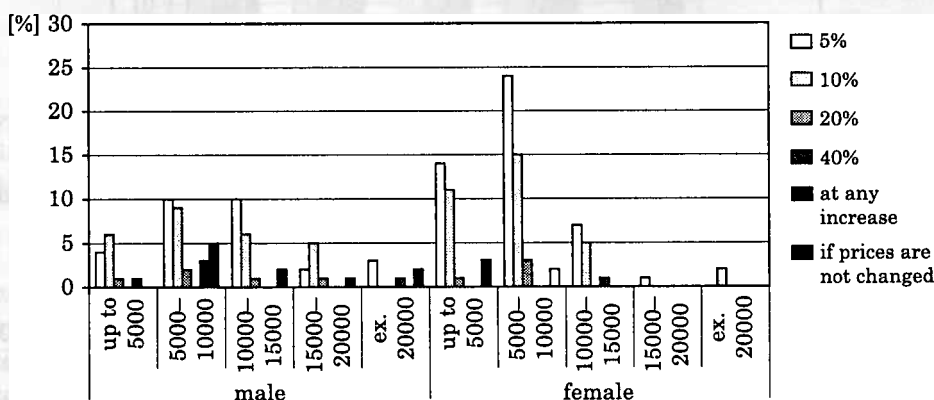


Fig. 2. Maximum Acceptable Surcharge on Eco-labeled Goods Depending on Sex and Level of Income (in % of respective income group)

Source: authors' own research.

The hypothesis that the students who are willing to pay most for environmentally safe foodstuffs are girls from families with a high level of income was not confirmed. Quite the opposite, respondents from low- and middle income groups are more interested in environmentally safe foodstuffs. It seems that they take their purchases more seriously, paying attention to and recognizing eco-labels.

The majority of respondents (68%) pay attention to the eco-labeling of products. Female respondents pay attention to eco-labeling to a greater extent (Fig. 3).

When the level of income increases the attention paid to eco-labeling by male respondents goes down. 80% of respondents with a level of family income exceeding 20 000 rubles a month per person do not pay attention to the eco-labeling of a product (this sample size is very small, 5 men). 70% of respondents with a level of income up to 5 000 rubles a month per person pay attention to eco-labeling (Fig. 4).

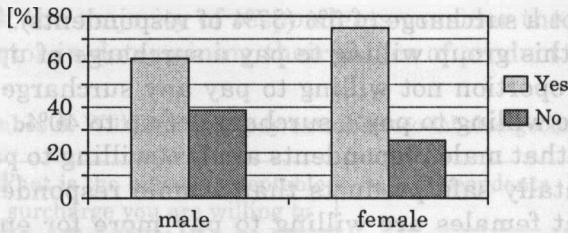


Fig. 3. Attention Paid to Eco-Labeling Depending on Sex (in % of total)

Source: authors' own research.

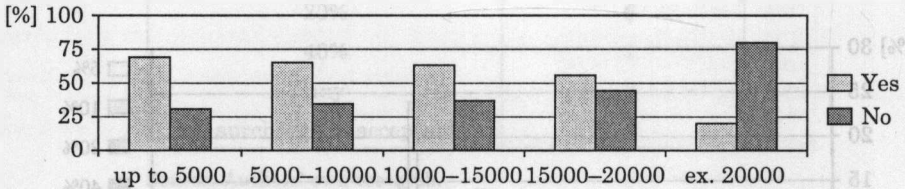


Fig. 4. Attention Paid to Eco-Labels by Male Respondents depending on their Level of Income (in % of income group)

Source: authors' own research.

When the level of income of a family increases, the attention paid by a female to eco-labeling also increases. 100% of respondents with a level of income exceeding 20 000 rubles (again, small sample size) and 79.3% of respondents with a level of income up to 5 000 rubles a month per person pay attention to eco-labeling (Fig. 5).

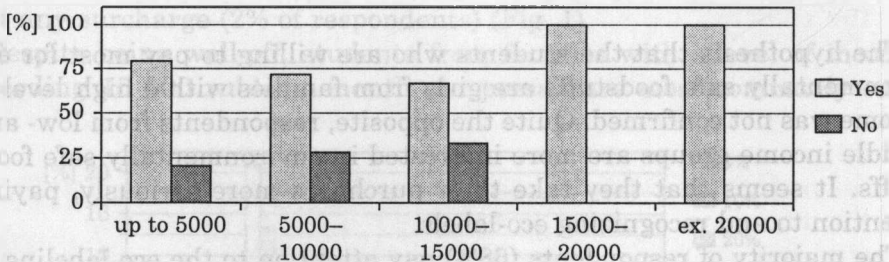


Fig. 5. Attention Paid to Eco-Labels by Female Respondents Depending on their Level of Income (in % of income group)

Source: authors' own research.

The respondents were asked: «Do you recognize different eco-labels?». 56% of the respondents consider that they recognize some eco-labeling. 30% of respondents are sure that they recognize the majority of eco-labels.

When the level of income of male respondents increases, their level of recognition of eco-labels decreases (Fig. 6).

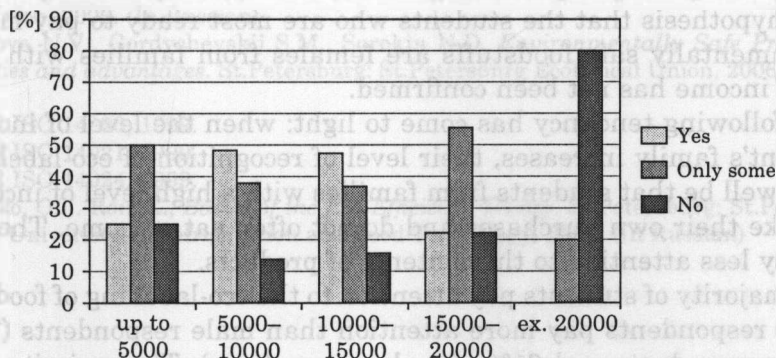


Fig. 6. Recognition of Eco-Labels by Male Respondents Depending on their Level of Income (in % of income group)

Source: authors' own research.

When the level of income of female respondents increases, their level of recognition of eco-labeling also increases. All female respondents with a level of income exceeding 10 000 rubles a month per person state that they recognize at least some eco-labels (Fig. 7).

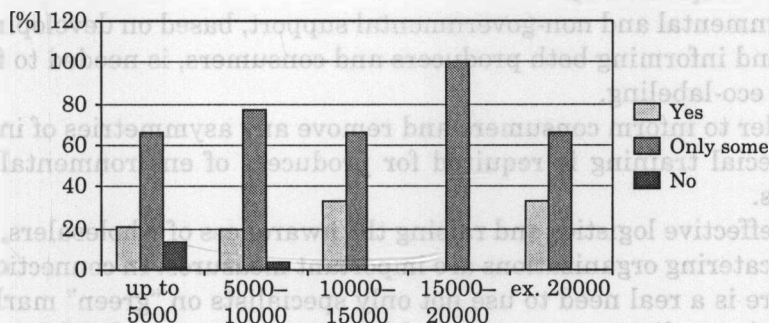


Fig. 7. Recognition of Eco-Labels by Female Respondents Depending on their Level of Income (in % of income group)

Source: authors' own research.

5. Conclusions

As a result of this study, the hypothesis that the citizens of St. Petersburg, including university students, are not willing to pay a significant

surcharge for environmentally safe products has been confirmed. A minimal increase in the price of environmentally safe products (5%) is commonly the highest acceptable increase (for 45% of respondents).

The hypothesis that the students who are most ready to pay more for environmentally safe foodstuffs are females from families with a high level of income has not been confirmed.

The following tendency has come to light: when the level of income of a student's family increases, their level of recognition of eco-labels falls. It may well be that students from families with a high level of income do not make their own purchases and do not often eat at home. Therefore, they pay less attention to the contents of products.

The majority of students pay attention to the eco-labelling of foodstuffs. Female respondents pay more attention than male respondents (74% of female respondents and 61% of male respondents). The majority of students only recognize some eco-labels for foodstuffs, regardless of sex (56% of all respondents – "Only some", 30% – "Yes"; 14% – "No").

Students' attitudes towards genetically-modified products is negative regardless of sex or level of income. 51% of male respondents and 73% of female respondents do not want to purchase foodstuffs with genetically-modified ingredients.

A large minority of students consider biologically active additives harmful regardless of sex or level of income (41% of male respondents and 47% of female respondents).

Governmental and non-governmental support, based on developing education and informing both producers and consumers, is needed to further develop eco-labeling.

In order to inform consumers and remove any asymmetries of information, special training is required for producers of environmentally safe products.

Also, effective logistics and raising the awareness of wholesalers, retailers and catering organizations are important measures. In connection with this there is a real need to use not only specialists on "green" marketing, but also journalists, presenters and PR-specialists capable of developing an effective policy of communication and informing consumers about the ecological benefits of new products in comparison with traditional ones.

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