

## **ANALYSIS OF BIO-PRODUCT CONSUMPTION BY THE POPULATION IN ZUGDIDI AND KUTAISI MUNICIPALITIES**

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### **Abstract**

The UN recognizes Green Growth and Green Economy as important factors for sustainable development. The Government of Georgia considers the Green Economy as one of the main means of the future development of the country and announces an initiative to implement voluntary measures to promote sustainable development. In this regard, it is essential to promote the ecosystem services, clean production, environmental education and green jobs. Green Economy and Green Growth require the involvement of the whole community. The transition to environmentally friendly activities is not carried out rapidly as Green Growth is a versatile and complex issue and requires a certain level of public awareness together with other factors.<sup>1</sup>

In recent years, the awareness of the population of different countries has shown a growing interest towards the problem of damaging the nature caused by the production, exploitation and utilization of various goods. From an ecological point of view, change of structures of irrational production and consumption will become one of the strategic directions of social development. However, the focus on eco-friendly production must be strengthened by recognizing its profitability and enabling the enterprise to receive both direct financial benefits - through the reduction of raw material costs, waste recycling, insurance and liability, and indirect ones - through more efficient environmental marketing and public opinion.

Green marketing strategies are expensive and complicated and its successful implementation requires a lot of effort.<sup>2</sup> Firms with green strategies can make a profit if they are able to attain the desired target positions in the minds of consumers towards the green brand in the market. Those green strategies tend to become more successful which are oriented on association, more credibility, enhanced perception of brand quality and brand loyalty among the target groups. It is no coincidence that the effects of these four communications

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<sup>1</sup>Green Economy <http://recp.ge/wp-content/uploads/2018/01/Green-economy-newsletter-GE-1.pdf> [L. s. 27.02.2022].

<sup>2</sup> Davari, A., Strutton, D., Marketing mix strategies for closing the gap between green consumers' pro-environmental beliefs and behaviors. London. Journal of Strategic Marketing, 2014, 3.

(i.e., brand associations, credibility (or trust), quality, and loyalty) represent the customer-based brand equity.<sup>3 4 5</sup>

**Keywords:** environmental awareness, green growth, green economy, bio-product, effectiveness, product consumption.

## Introduction

In today's marketplace, supplying the consumers with green products (i.e., sustainable and environmentally friendly products) have gradually become more active. Compared to regular products, bio-products are either biodegradable, or obtained through non-toxic ingredients, or packaged in materials which are recyclable. Consumers may often not prefer to use a bio-product for various reasons such as volume, labeling and price.<sup>6</sup> It is also interesting to see if the bio-product is used regularly and whether the type of product (green and conventional) is decisive in determining the amount of a product.

Based on the above-mentioned, we regarded it necessary to study the level of awareness of the residents of Zugdidi and Kutaisi municipalities towards ecological marketing and their readiness for the green growth and transition to a new stage of development. Identification of residents' attitudes will enable the marketers to improve their new green strategies.

## 1. Research objectives and methodology

The research included the residents of Zugdidi and Kutaisi municipalities. Research topic was the attitude of the residents towards ecological marketing in these municipalities, frequency of bio-product consumption, and the role of product type while determining the product amount. Quantitative and qualitative surveys as well as questionnaires were used as research methods.

For quantitative survey, the sample size was determined through the following formula:

$$n = \frac{z^2 p q N}{\Delta^2}$$

$n$  – confidence level ( $z=1,5$  for the probability of 85% confidence);  $N$  – population size (161351 people including IDPs – number of residents in Zugdidi municipality);  $p$  – sample proportion (0,5);  $q=1-p$ ;  $\Delta$  – margin of error (confidence interval - 7%).<sup>7</sup>

Thus, we have the following results:

$$n = (1,5^2 \times 0,5 \times 0,5 \times 161351) / (0,0049 \times 161351 + 1,5^2 \times 0,5 \times 0,5) = 90\,759,9375 / 791,1824 = 115$$

for Zugdidi municipality and 114 for Kutaisi municipality.

<sup>3</sup> Aaker, D. A., *Managing brand equity: Capitalizing on the value of a brand name*. New York: The Free Press, 1991.

<sup>4</sup> Chaudhuri, A., Holbrook, M. B., The chain of effects from brand trust and brand affect to brand performance: The role of brand loyalty. *Journal of Marketing*, 2001, 65, 81 – 93.

<sup>5</sup> Oliver, R., Whence consumer loyalty? *Journal of Marketing*, 1999, 63, 33 – 44.

<sup>6</sup> Szabo, S., Webster, J., Perceived Greenwashing: The Effects of Green Marketing on Environmental and Product Perceptions. *Journal of Business Ethics*. 2020, 2.

<sup>7</sup> Baghaturia, G., Chiloglu, I., *Business Research Methods*. Tbilisi. International Black Sea University. 2018.

Different types of questionnaires were used for the research and they focused on different directions:

1. Whether the consumers choose bio-products for frequent use due to their effectiveness
2. What do consumers, who regularly use bio-products, think
3. How can consumers motivation be raised to use bio-products
4. What role does ecological awareness play in product selection

## **2. Residents' attitude towards bio-products**

Residents of Zugdidi and Kutaisi municipalities with the following socio-demographic characteristics participated in the survey:

Zugdidi Municipality - 52% of respondents were women, and 48% - men;

Kutaisi Municipality - 45% of respondents were women, and 55% - men;

27% of respondents - aged 18-25;

31% of respondents – aged 26-35;

14% of respondents – aged 36-45;

28% of respondents – aged over 45.

48% - respondents with secondary and secondary special education;

35% - respondents with incomplete higher education;

17% - respondents with higher education.

The survey showed that 59% of respondents realize that there are ecological problems in Zugdidi, and only 41% of respondents think differently. 83.5% of respondents believe that there are ecological problems in Kutaisi, and only 16.5% of respondents think that there are no ecological problems in the city.

In addition, 73% of respondents in Zugdidi believe that the basic ecological problem is the air pollution, 10% of respondents think that waste problem (household waste and industrial waste landfills) represents the main problem. 17% of respondents choose the column "Other" and add their answers. Less popular answers are deforestation and littering in public places. 63.3% of the respondents in Kutaisi think that the major ecological problem is waste problem; Air pollution represents the main problem for 57% of residents and water pollution for 32.4%.

Main sources for getting information about ecological problems in Zugdidi municipality are the following: TV news – 10%; publications in a local magazine – 2%; Internet – 51%; friends and acquaintances – 19%; 18% of respondents find it difficult to answer. Main sources for getting information about ecological problems in Kutaisi municipality are the following: TV news – 23,4%; publications in a local magazine - 3,9%; Internet - 51,9%; friends and acquaintances - 49,9%; 22,1% of respondents find it difficult to answer.

The majority of Zugdidi respondents (56%) think that the local authorities should be involved in solving this problem. According to the second most popular response, this problem should be tackled by the organizations which are responsible for environment control and protection. 73.7% of Kutaisi respondents think that the problem should be solved by the organizations which are responsible for environment control

and protection, 19% of the respondents expect that the residents should explore the ecological problems themselves and deal with them.

In response to the question "What measures would you suggest to reduce or solve environmental problems?", respondents expressed the following opinions:

- to establish and develop the "environmental non-governmental" organizations;
- to introduce the new, resource-saving technologies in enterprises that will reduce environmental pollution;
- to increase the efficiency of waste management, utilization and recycling;
- to conduct "eco-actions" regularly.

34% of respondents have heard about the environmental actions and campaigns held in Zugdidi (such as "Clean City", "Clean the World") while 66% of respondents have not heard about them. In addition, only 4% had taken part in such activities. It should be noted that most part of them are residents having higher or incomplete higher education, and their average age is 18-25 years. 29% of respondents chose the option "No, but I want to", while 35% of respondents had not attended the actions and do not intend to do so.

At the same time, the majority of respondents (52%) believe that the actions have an impact on public opinion, but they are not effective enough. 35% of respondents believe that environmental campaigns have absolutely no impact; 13% of respondents are fully satisfied with the impact of the actions.

Thus, the first survey showed that most residents of Zugdidi and Kutaisi municipalities are aware of environmental problems, but they think that these problems should be solved by local authorities or special environmental organizations, which indicates a relatively low ecological culture in the city. This also confirms the fact that only a small number of local residents (mostly young people) are interested in environmental actions and campaigns, and the vast majority of them do not intend to participate in these activities.

Regarding the attitude of the local authorities towards the ecological situation and the formation of the public environmental culture, the interviews revealed that the representatives of the municipality are making result-oriented efforts. One of the most important priorities for Zugdidi and Kutaisi municipalities is the implementation of a green policy, which is confirmed by the decision of the Government of Georgia to establish a "Climate Change Council" in January 2020. Within the Covenant of Mayors, a "Municipal Development Coordination Platform" was established, so called "Club of Mayors" and members are Zugdidi and Kutaisi municipalities.

The Club of Mayors is an advisory body to the "Climate Change Council". This fact enhances the role of these municipalities in the process of fulfilling the international obligations of the state and allows them to have direct communication with the top officials of the executive branch of the country about their challenges and success. Municipality makes a commitment to reducing CO<sub>2</sub> and other greenhouse gas emissions by at least 40% by 2030 through energy efficiency measures and harnessing the renewable energy sources, as well as increasing the municipality's resilience through adapting to climate change.<sup>8</sup>

Various important transport, infrastructural or other measures are taken in the direction of eco-friendly policy in Zugdidi and Kutaisi municipalities. In particular, since 2020, the car fleet is completely replaced by new Euro 5 standard buses. Technical characteristics of these buses will reduce carbon dioxide emissions.

<sup>8</sup> Covenant of Mayors, <http://com-east.eu/ka/about-us/covenant-of-mayors/> [L. s. 27.02.2022].

Water and sewerage works will be completed throughout the town and renewable energy resources will be created through the water treatment plant. Current negotiations with relevant donor organizations aim to establish a municipal waste management plant. Newly built preschools in the municipality have appropriate energy efficient infrastructure. The outdoor lighting system in the municipality are fully adapted to the energy efficiency requirements. The construction of the composting center has been completed, which makes it possible to get compost (bio fertilizer). Separate collection of waste has started in Kutaisi since 2015, particularly plastic and cardboard for their further recycling.

“Green Budget” is being implemented within the concept of green budget approved by Zugdidi Municipality Sakrebulo. Local initiative groups have been set up to create mini-recreational zones in the municipality and pre-defined budget allocations are given in the municipal budget. The main value of the project is inclusive approaches along with the improvement of the ecological condition. "Green Budget" is popular in Zugdidi municipality and the level of citizen involvement is not too low. In the competition "Clean Region 2020", Zugdidi Municipality is the winner in the nomination of the cleanest municipality.

Nevertheless, questionnaires showed that the conducted environmental actions and campaigns do not get proper attention and ecological situation is insufficiently covered.

The results of the research also show that the level of ecological culture of the population and the state of ecological marketing in the region are not sufficiently high. Environmental campaigns in the region are less effective and do not attract a sufficient number of local residents.

As for the consumption of eco-friendly products, more than half of the respondents prefer to use them. They consider that such products are safer not only for their health but also for the environment and this fact indicates that there is a necessity for the changing the environmental situation. Nevertheless, the residents of Zugdidi and Kutaisi municipalities have a mostly passive attitude towards their role in supporting environmental measures in the region.

The following study was conducted to find out whether the consumers choose the green products for frequent use due to their effectiveness.

In response to the question about the use of ecologically clean products, respondents answered as follows: 75% of respondents in Zugdidi and 77.2% in Kutaisi use products that are marked as "ecologically safe", while up to 25% do not think about consuming ecologically clean products.

In addition, among the reasons for the use of eco-friendly products, 76% of consumers name the safety for health and the environment; Only 19% of respondents choose the safety to health, while 9% of respondents care only about the lack of harm to the environment when they use such products.

23% of respondents are ready to pay more for environmentally friendly goods; 46% of respondents are also ready, but not always; 31% of residents do not want to pay extra at all.

The research was conducted in the market chain "Clean House". Consumers of detergents, hand sanitizers, oral care products and bathroom cleaners were interviewed.

In the survey, 55% of respondents answered "I know organic products", "I know green". 59% of consumers think that bio-products are less effective and need to use more in order to get the desired result. For example, the Detergent Customer Interview Questionnaire included the following questions:

1. "I am ready to pay more for products made in Georgia"

2. "I am ready to pay more for Eco- friendly packaging".

3."I am ready to pay more for environmentally friendly cleaners and detergents."

1. "I try to get aware of the products contaminated by environmental pollution and I tell myself not to buy them".

2. "I pay great attention to environmental compatibility when purchasing personal care products and household products."

3. "More often I consciously buy products that have less impact on the environment."

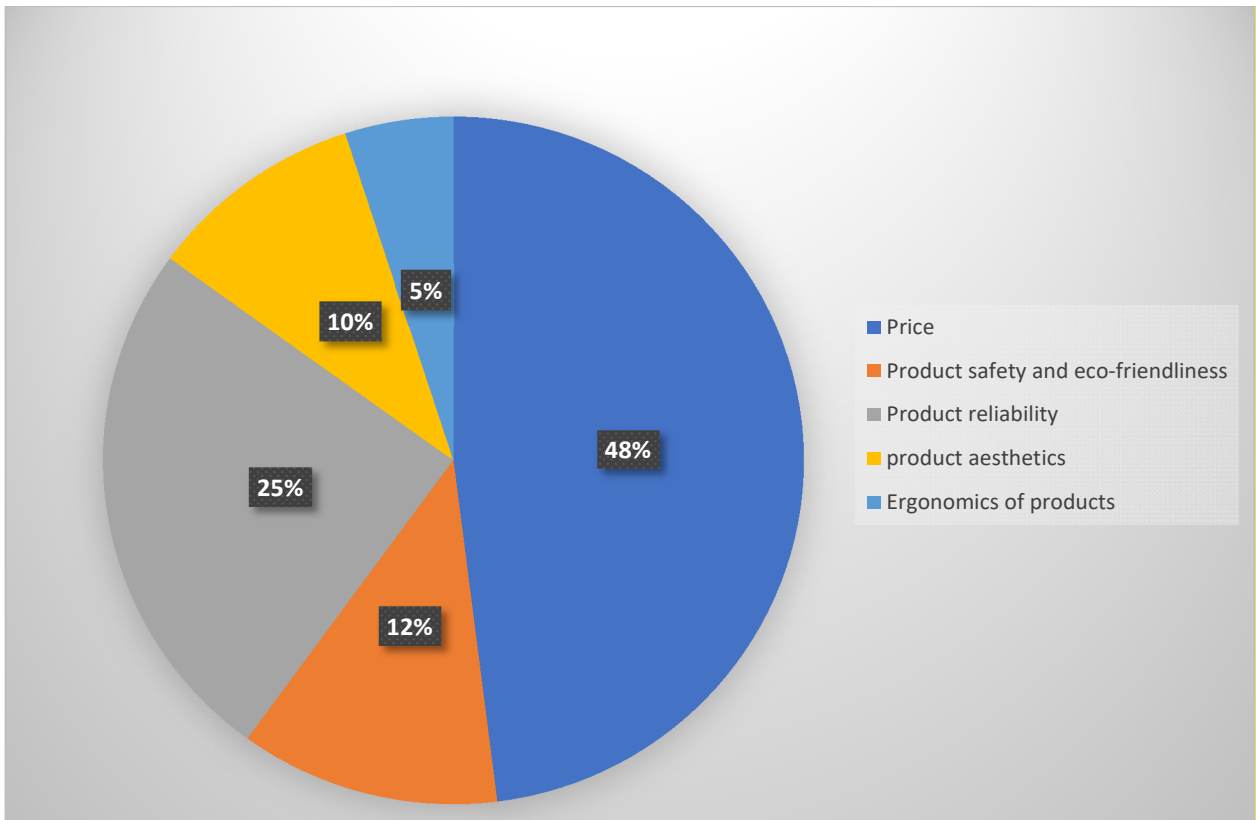
The analysis of the study showed that respondents are less informed about the effectiveness of bio-products. Product strength information is not clearly shown on the product packaging by product manufacturers; When making a decision, consumers rely less on the negative impact of the product and the principles of ethics. The study also confirmed that the impact on human health is considered a priority in decision making. In this case their motivation is high to buy bio-products. An example of this was shown by interviewing respondents when purchasing dental care and Bath Cleaning products. When buying dental care products, 30% more is considered to be the purchase of organic products rather than while buying bath cleaning products.

In order to assess the potential readiness of consumers to receive ecologically clean and safe products, a study was conducted on the example of the Georgian dried fruit brand "Chikori".

Products are sold in 100, 150 and 450 gram packages in natural, without any additives. The company "Caucasus Organic Fruits" also produces dried fruits in Georgia. It is certified by the FFS standard which means the product is safe, harmless, high quality, no chemicals or conservatives are used. The main importers of dried fruits in Georgia are Turkey, Uzbekistan, United Arab Emirates, Iran, Germany, Ukraine.

Analysis of the dynamics of companies' competitiveness has shown that the implementation of a market (competitive) strategy is of great importance for success in the market, it takes into account, firstly, the competitive advantages at the disposal of the company, and secondly, the effectiveness usage of these advantages in the existing market conditions.

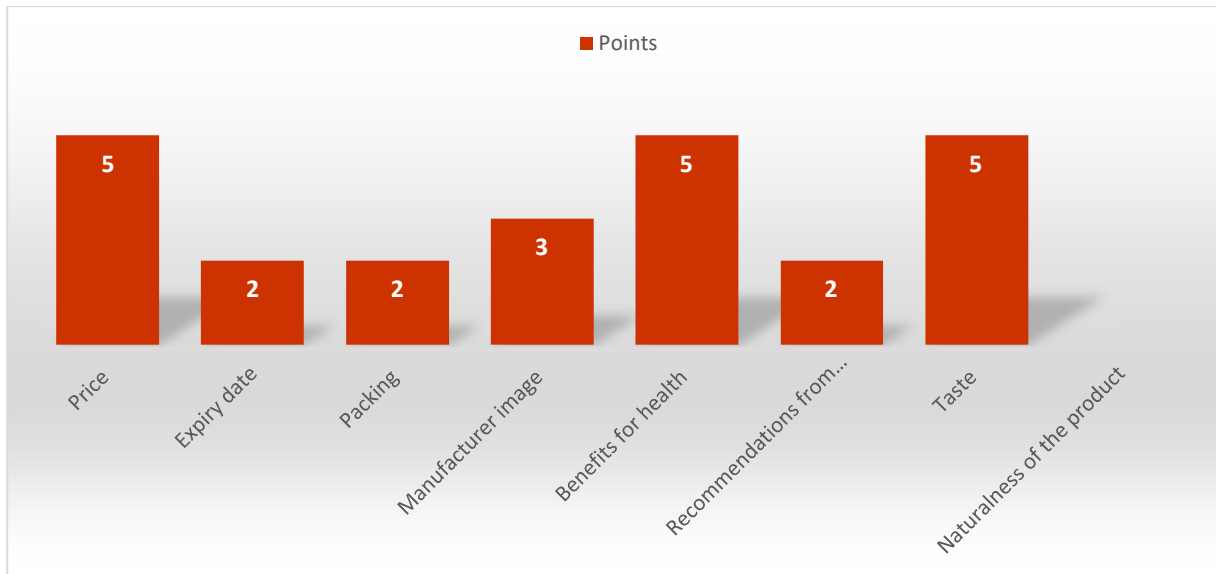
The survey revealed that the fundamental factor for respondents that effects the choice of goods and services is price (48%), which coincides with the opinion of experts on this issue. The next very important factor is the reliability of the products, 25% of the respondents answered the following: according to the reduction in the quality of importance, there are factors such as the aesthetics of the product - 10%, product safety and eco-friendliness - 12%, ergonomic performance of products - 5%. This indicates the need to inform consumers maximally about the importance of consuming environmentally friendly and safe products to achieve the beneficial effects of these products on human health (pic. 1).



*Factors that influence on consumers' choice of goods and services. (Pic 1)*

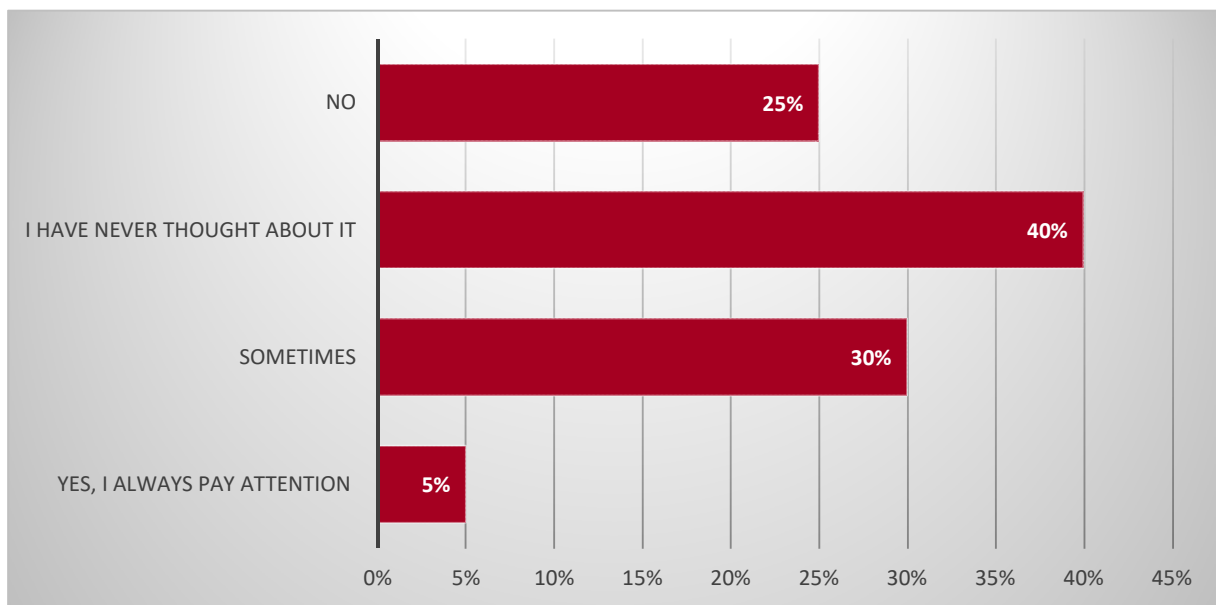
The results of the study revealed the key factors in choosing dried fruit (pic.2). According to the evaluating criteria on 5-point scale consumers named price, health benefits and taste as the most important things. Less important factor when choosing products by consumers is the image of the manufacturer and the naturalness of the product, the absence of harmful additives, and they think that the packaging, expiration date, recommendations of relatives and acquaintances are insignificant to them.

The survey showed that the majority of consumers (40%) never thought about the eco-friendliness of the products they purchased. This is due to the fact that manufacturers of environmentally friendly products do not use marketing tools to promote their products in the market and don't provide consumers with information. 30% of consumers in some cases pay attention to the eco-friendliness of the products and this segment is mainly created by consumers, for whom the naturalness of the product and the lack of harmful additives are important factors in choosing the dried fruit. For a quarter of the respondents, the eco-friendliness of the product they buy is not important and they do not pay much attention to it. And only a small percentage (5%) of consumers always consider to purchase ecologically clean products. (pic.3)



\* Columns from left to right

Assess the quality of prioritization of factors for consumers that influence the choice of dried fruit. (Pic 2)

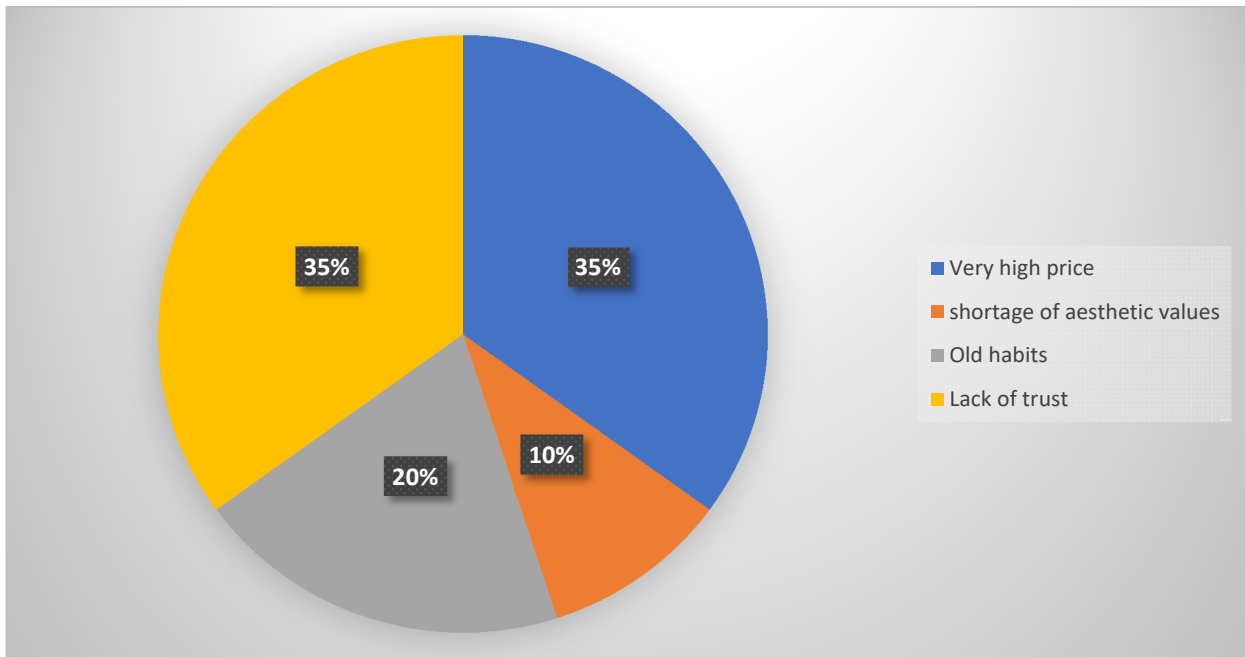


The quality of attention paid to the environmental friendliness of the products purchased by consumers. (Pic 3)

Consumers named lack of trust and high price as the main reasons for low consumption of environmentally friendly products. Respondents are not sure that the offered product is really ecologically clean, as consumers are not competent enough to set standards for the composition of purchased products and without the help of experts they will not be able to assess whether the product meets all the requirements for this



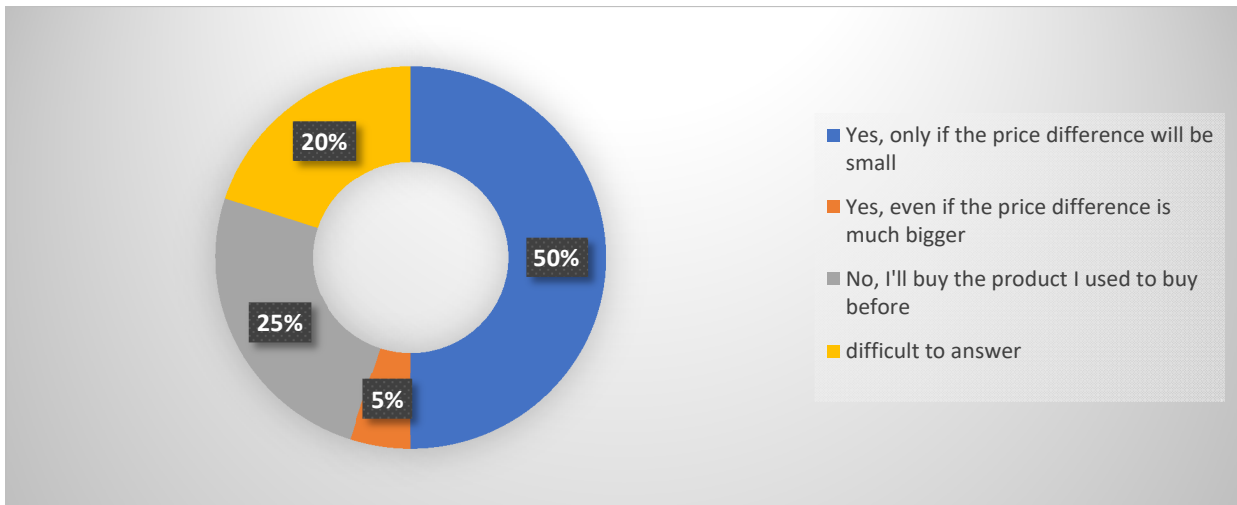
category. So they are not able to objectively assess the ecology and the absence of harmful substances for health in the products purchased by them. Consequently, consumers do not have a firm belief that the goods they are buying are truly ecologically clean and they are not willing to pay more for similar products. 20% of consumers are not ready to replace a familiar product that fully meets their needs and which they have been buying for a long time, with a new one as they might not meet their expectations. Consumers named the deficit of aesthetic values (10%) as one of the reasons for low consumption of ecologically clean products. (Pic.4)



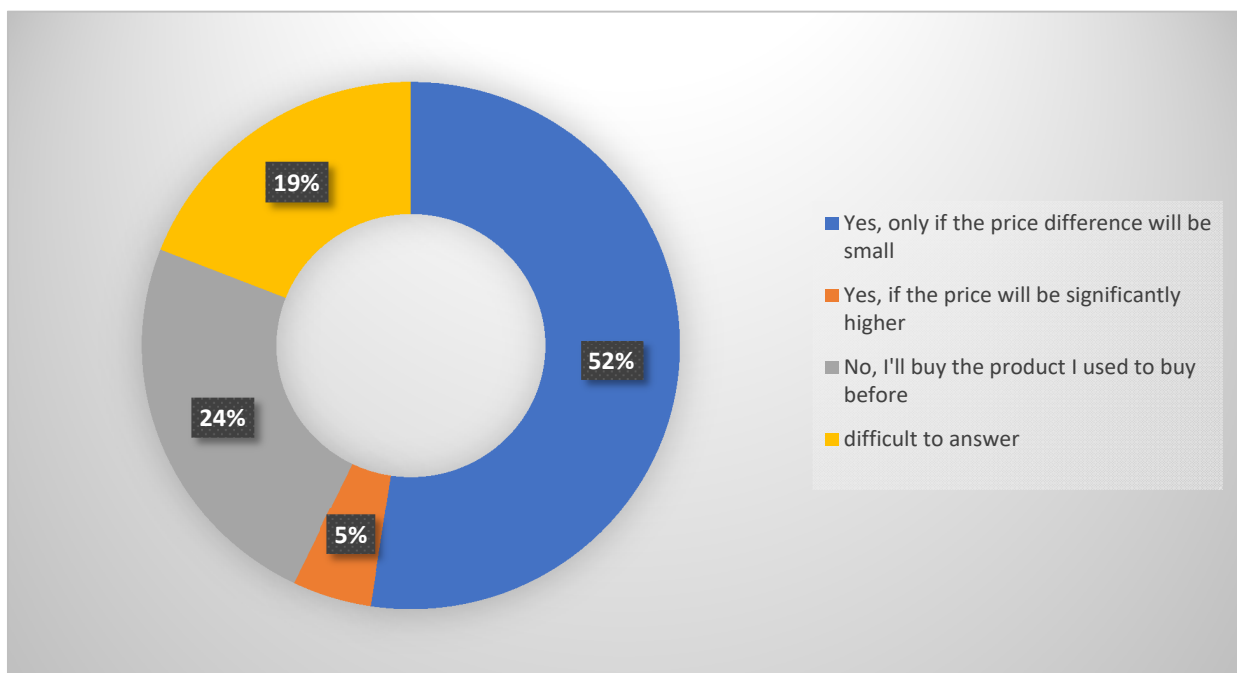
*The low level of consumption of environmentally friendly products, the main reasons. (Pic 4)*

The survey showed that 50% of respondents are willing to consume a more environmentally friendly and safe product if the price difference will be small. 25% of consumers are not ready to buy ecological products and will continue to buy the products he/she consumed previously. 20% of respondents find it difficult to answer this question, so manufacturers will be able to persuade them to buy environmentally friendly products through the use of marketing tools. Only a small percentage of respondents, about 5%, are willing to buy an environmentally friendly and safe product, even if the price difference is much higher (pic.5)

A similar situation arises with regard to consuming more ecologically clean ice cream: 27% of consumers are willing to buy this product, if the price difference will be small. Quite a large number of respondents 59% find it difficult to answer the question, while 12% of respondents do not prefer ecologically clean ice cream, they think that ice cream is not an essential product, so they are not going to increase their costs to buy this product (pic.6)

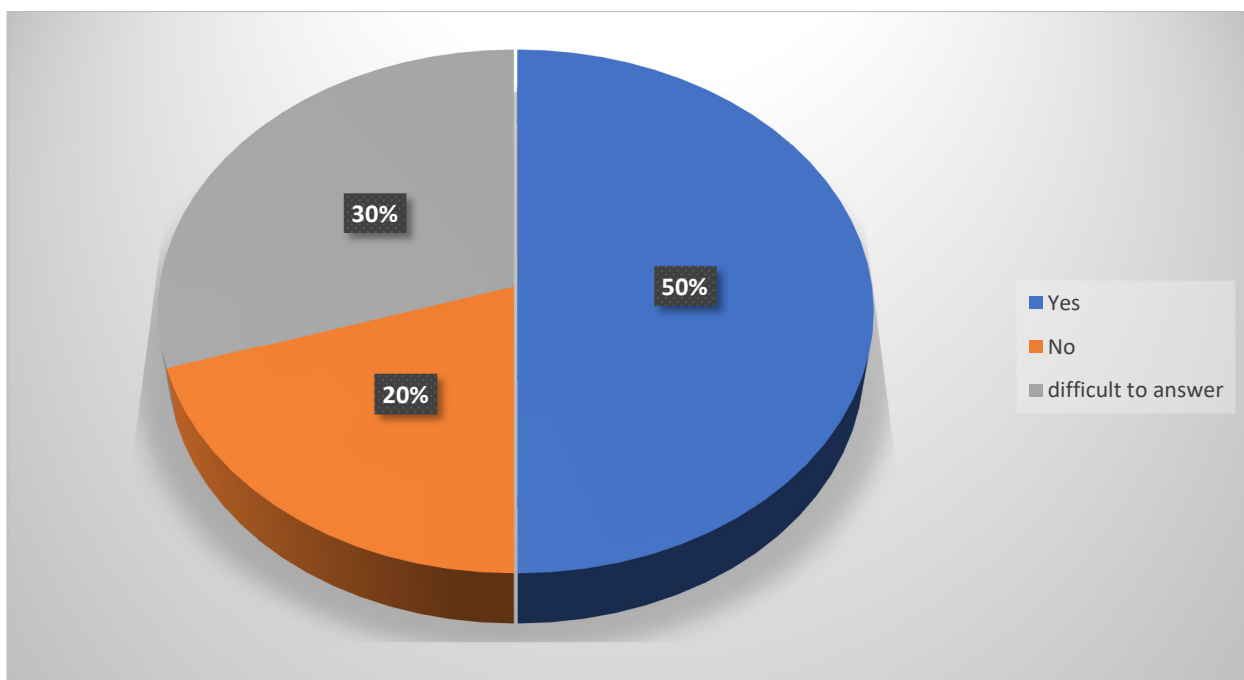


*Customer willingness to choose a more environmentally friendly and safe product based on its price (Pic 5)*



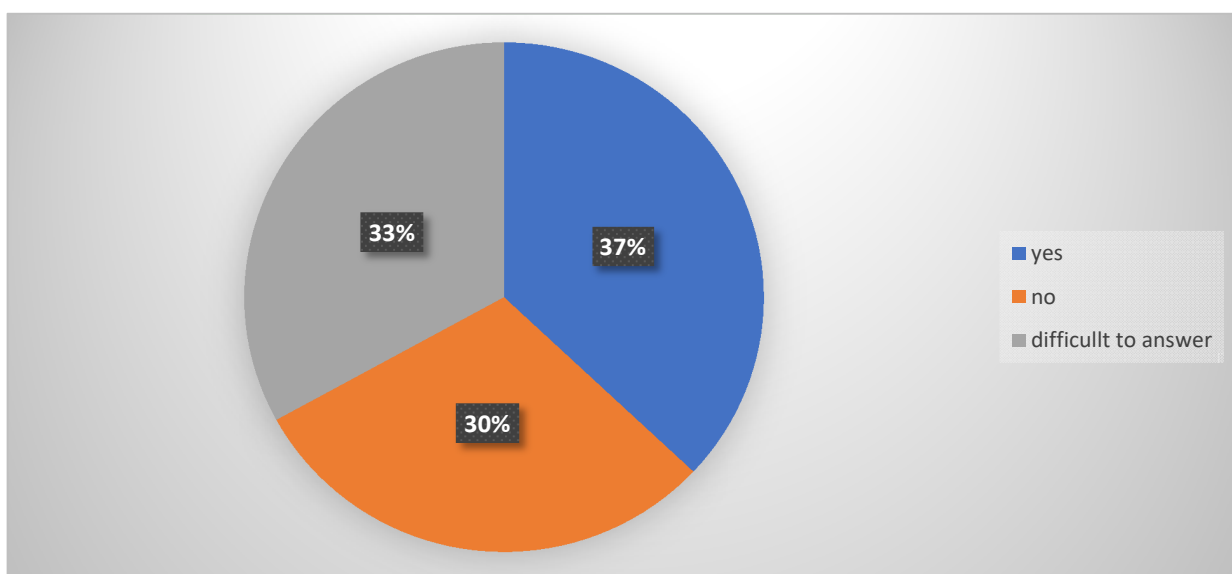
*Willingness of consumers to make a choice on a more environmentally friendly and safe ice cream, depending on its price (Pic 6)*

As the survey showed, 50% of consumers are ready to buy environmentally friendly and safe product, although the packaging of this product will be less colorful, sharp and attractive. This is explained by the fact that the aesthetics of the product is not the most important factor when choosing a product. 30% of respondents find it difficult to answer the question and only 10% are not ready to make a choice in favor of an environmentally friendly and safe product due to insufficiently attractive packaging (pic.7)



*Willingness of consumers to choose a more environmentally friendly and safe product, depending on its packaging. (Pic 7)*

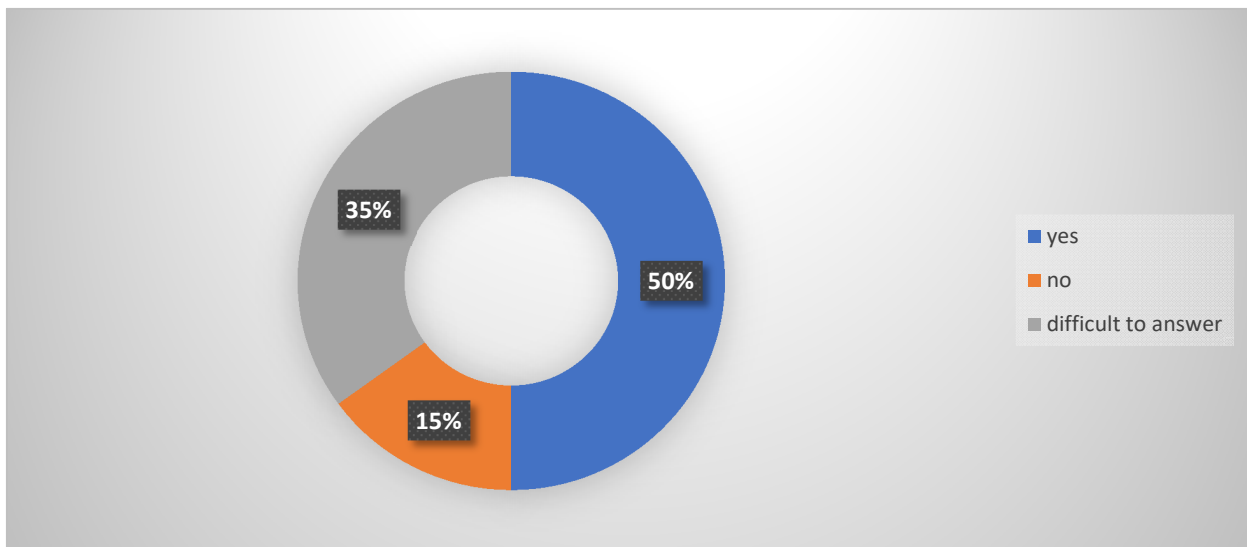
Consumers noted that despite the packaging, they are somewhat willing to buy environmentally friendly ice cream (37%), but at least 30% are not ready to choose this product due to the insufficient brightness, color and attractiveness of the ice cream packaging. A fairly large proportion of consumers (33%) found it difficult to answer this question (pic. 8).



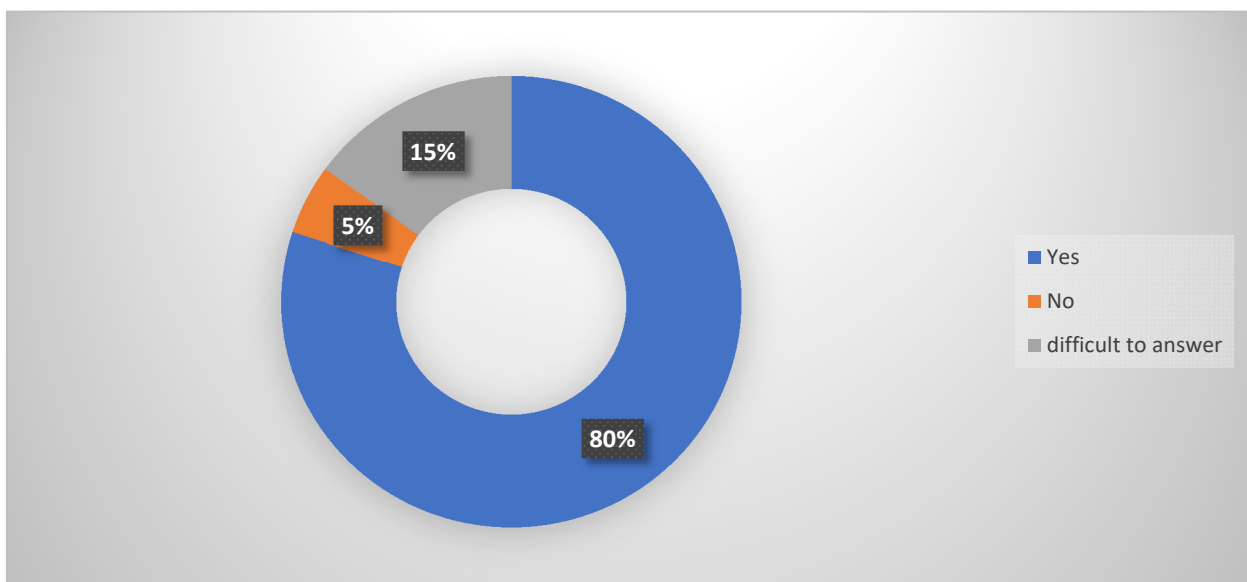
*Readiness of consumers to choose more ecologically clean and safe ice cream, depending on its packaging. (Pic 8)*

The survey showed that 50% of consumers do not suggest that enterprises are really ready to produce products that fully comply with environmental requirements. This is due to the fact that manufacturing companies do not provide enough information to consumers about new technologies in the production of goods. Quite a significant number of respondents, in particular 35%, believe that enterprises are fully prepared to produce eco-friendly and safe products, but 15% of respondents reject this view (pic. 9).

According to the respondents, enterprises are fully prepared to provide complete information about the ecological components of the products they produce (80%). This requires the use of marketing tools. 15% of respondents find it difficult to answer the question and only 5% of consumers think that enterprises are not ready to provide information on eco-friendliness of products (pic. 10).



*Readiness of enterprises to produce products that fully comply with environmental requirements. (Pic 9)*

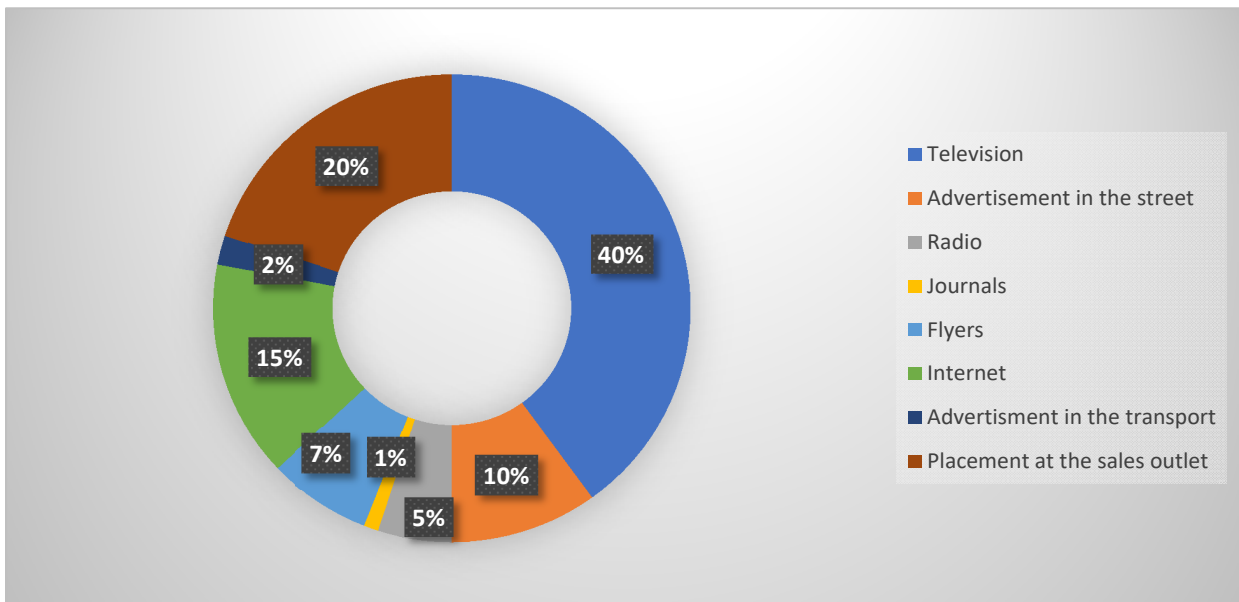


*Willingness of manufacturers to provide comprehensive information on the ecological composition of their products. (Pic 10)*

The majority of respondents - 40% said that television is the most popular source for the consumers to get information about ice cream, which indicates the psychological impact of advertising has a great impact on consumers' choices. Placement of ice-cream at the sales outlets is the second most important source of giving information to consumers about ice cream in terms of priority (pic. 11). Currently consumers have started to use an internet more actively and it is one of the sources for them to get information about this product.

Thus, the results of the marketing research, which assesses the potential demand of the population for ecologically clean and safe products among the residents of Zugdidi and Kutaisi municipalities, indicate that

- o The most important factor influencing the choice of goods and services is price; The main factors that determine the choice of ice cream for the consumer are price, health benefits and taste;
- o Most of the respondents have never thought about the eco-friendliness of the products they buy and do not pay attention to the purchase of ecologically clean and safe products;



Source of informing consumers about ice cream. (Pic 11)

- o Consumers named excessive prices and lack of confidence about new products as the main reasons for the low level of consumption of ecologically clean products;
- o Consumers are ready to buy ecologically cleaner ice cream only if the price difference compared to a similar product would be small;

To overcome this problem, it would be advisable for manufacturers to show more clearly the effectiveness of green products. When information about a product's strengths is clearly displayed on the product packaging, consumers are less likely to rely on the negative impact of the product and the principles of ethics when making decisions.

In this regard, it is necessary to make number of activities in order to raise the level of public environmental awareness, with the help of projects implemented in the educational system, as well as to introduce a system of financial incentives for the environmental initiatives. At the same time, through ecological marketing

tools, it is necessary to popularize the idea of eco-friendliness in public, as well as to raise the interest of the population towards ecological consumption to a new level.

This study shows that product type - bio-product versus conventional product - plays an important role in the amount that the consumer uses in one case to achieve the desired result.

## **Conclusion**

The results of all three studies indicate that consumers use less bio-products compared to the usual product. In addition, consumers see differences in the use of green and regular products. Customers who are eco friendly use big amount of bio-products and less eco-friendly users don't show an example of such use.

It seems that this phenomenon of using more bio-products is caused by consumers perceiving more efficiency of this type of product. Consequently, when the perceived effectiveness of a bio-product is supported by credible evidence, the distinction between green and regular product use disappears. We found support for our research hypotheses in all three studies using different products (1. Hand Disinfectant, Oral Care and Glass Cleaner 2. Dried fruit 3. Ice Cream), different indicators of product greenness (using green label and company descriptions) and different settings, which shows the actual use of the product.

Thus, green shopping is an expression of what people think depending on their social environment and what their expectations are in general. In this sense, behavior of user is a symbol of differentiation and identification.

It is necessary not only to analyze the motivational factors for the purchase of bio-products, but also to study the results of the use of bio-products. It should be noted that Georgia has an obligation to "green" the development of the sectors provided by the Association Agreement between Georgia and the European Union.<sup>9</sup> In order to introduce a green economy, it is necessary to change the "consumption model", both in the production and marketing of environmental products, as well as in the reduction of human consumption of "unnecessary" products.<sup>10</sup> Although public concern about sustainability has grown and it is considered that organic products are one way to reduce and alleviate resource pressures, a survey conducted in Zugdidi and Kutaisi municipalities showed that consumer use of organic products is still low.

The transition to "Green Growth" requires profound cultural changes in society, in particular, raising public awareness, their involvement in the decision-making process, which will significantly contribute to the growth of the use of "green products".

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<sup>9</sup> World Bank. Impact of Climate Change on the Georgian Coast: Vulnerability Assessment and Adaptation Options. © World Bank, 2020.8.

<sup>10</sup> Green Alternative. Green Policy and Environment, 2013, 7.

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