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**CONSUMER BEHAVIOUR ANALYSIS FOR PESTICIDE / CHEMICAL LOW-
LEVEL PRODUCTS****Silvana Dervishi, PhD Candidate**

Economics and Policies of Rural Development, Agricultural University of Tirana, Albania

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ABSTRACT

The purpose of this paper is to provide the evidence of a relationship between consumer willingness to pay for products with reduced levels of chemicals fertilizer. Through the literature review and statistical analysis, we will try to answer the raised research questions. The work constraint of this research lies in the ability to provide primary data focusing only in one geographical area such as Tirana, and the inability to reach all target respondents.

INTRODUCTION

Recently, consumer behaviour is a massive research topic. The reasons for this massivism is explained in different ways by different authors. However, researchers point out an important factor connecting consumer behaviour to the success of a particular business strategy (Kotler & Keller 2012). In this chapter, consumer behaviour will be analysed in relation to an agricultural production strategy, that of fruit and vegetable production with reduced chemicals and pesticides and also organic products. The consumer preference analysis will answer these research questions: What is the importance that consumers in Tirana attributes to products with reduced levels of chemicals and pesticides? What is the willingness to pay for products with reduced levels of chemicals and pesticides?

Despite consumers are somehow aware of organic products, in most cases they do not understand what organic products are (Yiridoe *et al* 2005). The understanding process is very complicated and many consumers have no information about the direct attributes of organic products. The reasons that make the process of purchasing organic products difficult remain as follows: the lack of certainty about the attributes of organic products as well as the lack of trust about the way these products are labelled, which are partially related to: distrust of certified bodies, unequal standards in production and certification. In these conditions other forms of labelling as products with reduced levels of pesticides and chemicals are a good opportunity to market agricultural products. The concerns about health and safety are the main reasons that drive consumers to buy organic and low-level pesticide products.

Like in other parts of the world, Albania is another country which shows that interest in organic products has been increasing as a result of perceived risk and possible health damage to conventional products. Various studies have analysed the reasons that push consumers to buy these products. In different countries the reasons are different. The consumer behaviour analysis, groups consumers depending on the factor motivated by the decision to buy at: environmental consumers, consumers who have phobia against pesticides and their presence in food (food phobic), enthusiasts, hedonists who believe that a higher price on products shows a better quality, humanists and healthy eaters. The future of organic agriculture, with reduced levels of pesticides and chemicals, is largely dependent on consumer demand. In this context, a consumer-oriented study approach to understand organic agriculture is important not only from the marketing viewpoint of these products but also in terms of policy making.

MATERIALS AND METHODS

The main purpose of the paper is to assess the willingness of Tirana city customers to pay for a particular quality of products they consume - such as products with a low level of use of pesticides and chemicals. The results of this paper will be used by different actors, primarily from the producers and public institutions that work towards supporting these products in Albania. The method chosen for study purposes is the Contingent Evaluation. The ease of developing the method, understanding, cost, and time required by the method to develop

are some of the leading motives that led to the selection of this method. The technique used is the payment card method. Surveys were conducted during 2016 in the city of Tirana. Convenience sampling was applied to select the interviewed sample. This form of sampling consists in selecting individuals who present their willingness to become part of the study. The main advantages of this sampling form relate to the availability of individuals and the speed of data collection. But this method has disadvantages among which we mention: the risk that the sampling is not representative of the entire population. The individuals were interviewed near the market; for the purposes of the study were selected markets in different areas of Tirana. About 150 individuals were interviewed.

The questionnaire used consists of three parts. In the first part, we collected the socio-demographic data of respondents, including variables such as gender, age, education, and income. The second part collects information related to purchasing behaviour, regarding the importance that the customer accords to low-use products of pesticides / chemicals and organic products.

Questions about the importance of attribute of low level pesticides / chemicals on fruit fruits were developed using the psychometric scale of Likert. The scale is presented as follows:

Not important 1 2 3 4 5 Very important

The question was addressed in this form: From 1 to 5 how important it is for you that the fruits and vegetables you consume to be low in pesticides and chemicals. Rate 1 indicates that these attributes are not very important in the decision to buy; 2 not important, 3 neutral, 4 important and 5 very important. 0 was included as a response to customers who did not have a response.

Finally, there is a contingency scenario where the individual presents the willingness to pay per kg of fruit / vegetables with low levels of pesticides and chemicals. The variables coding is (0=yes, 1=no) while WP is expressed in percentage.

Statistical analysis and interpretation of data

To answer the above research questions, descriptive analysis were conducted and inferential analysis. Paired T-test was used to understand if there is a difference between the degree of importance accorded to the attribute, the low level of pesticides, the low level of chemicals and organic products. Analysis of variance One Way Anova will be used to understand if socio-demographic characteristics influence on the willingness to pay for low-level pesticide and chemical products.

RESULTS AND DISCUSSION

To answer the research question if the customer considers important attributes reduced level of pesticides / chemicals and organic products we will see the data in the table below. The results show that the reduced level of chemical attribute is considered to be the most important compared to the attribute of organic fruit and vegetable, fruits and vegetables with reduced pesticides ($t(\text{value})=-2.762$; $p(\text{value})<0.01$).

Similarly, the reduced level of chemical attribute is considered to be more important than the organic product attribute ($t(\text{value})=4.915$; $p(\text{value})<0.05$). While among the attributes, fruit-vegetables with reduced pesticides and organic fruits and vegetables there are no statistically significant changes as far as assessment of the importance of dedicated to the purchase process ($t(\text{value})=1.533$; $p(\text{value})>0.05$) is concerned. (See the annexes). This result shows that for the consumers, the organic product has the same quality as the product with reduced pesticides.

Table 1. Pair Comparisons between Attributes

		Mean	N	Std. Deviation	Std. Error Mean
1	Pesticides	4,29	152	1,459	,118
	Chemicals	4,63	152	1,065	,086
2	Pesticides	4,29	152	1,459	,118
	Organic	4,03	152	1,617	,131
3	Chemicals	4,63	152	1,065	,086
	Organic	4,03	152	1,617	,131

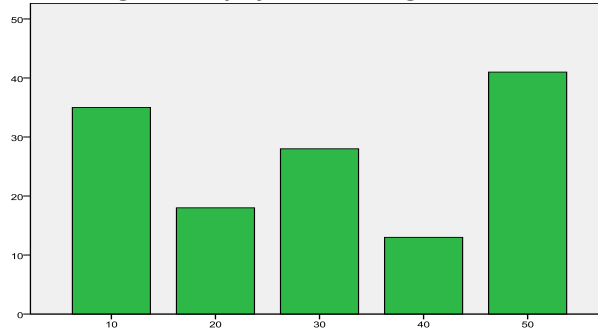
Source: Author's work

This result is explained by the level of information the customer possesses regarding the three attributes considered in the analysis. Organic product information is less comprehensible to the customer, compared to the product attribute with reduced level of chemicals. The same goes for products with reduced levels of pesticides for the customer. It is more important that the products have a reduced level of chemicals as they are considered to be the most dangerous to health. These findings are consistent with the findings of other authors (Kokthi *et al.*, 2014).

[Dervishi* *et al.*, 6(12): December, 2017]
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Through this analysis, we have analysed also the WTP for low pest/chem fruit-vegetables. The following summary will analyse the willingness to pay for fruit and vegetables with reduced levels of pesticides / chemicals.

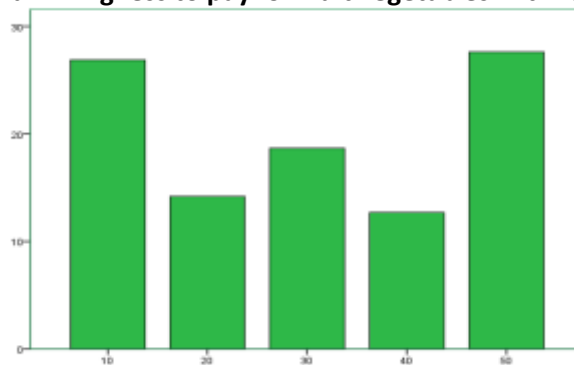
Graph 1 : Frequencies and willingness to pay for fruit vegetables with reduced level of chemicals



Source: Author's work

From the graph we see that around 23% of interviewed customers are willing to pay 10% more for reduced chemicals products, while 27% are willing to pay 50% more for these products.

Graph 2 : Frequencies and willingness to pay for fruit vegetables with reduced level of pesticides



Source: Author's work

The graphs 6 and 7 show willingness to pay for fruit and vegetables with reduced levels of chemicals and pesticides. The interviewee's customer is willing to pay about 31% more for low-level vegetables with reduced levels of chemicals and about 30% more for products with reduced pesticide levels. Although by comparing the level of importance accorded, the reduced level of chemicals was estimated to be more than pesticide reduction, whereas the willingness to pay is approximately the same. Willingness to pay may be the result of the hypothetical scenario and the method followed. These figures also show that the Albanian consumer is becoming more and more sensitive to health issues.

CONCLUSION

Reduced levels of chemicals have been rated as more important than the attribute of organic fruit-vegetable and reduced pesticide fruit-vegetables.

Also, the reduced level of chemical attribute is considered to be more important than the organic product attribute. The first attribute is more explicit than the second attribute in customer's perceptions. While between the two attributes, fruit-vegetables with reduced pesticides and organic fruits-vegetables there are no statistically significant changes. This result shows that to the consumers the organic product has the same quality with the reduced pesticide product, proving once again the reduced level of information available to the Albanian customers in relation to these two qualities. Being that both attributes are attributes of trust, the customer cannot be informed if the products are produced respecting the principles of organic production or reduced pesticides before and after consumption. Under these conditions, customer awareness about these products is very important for the purchase process. If an individual cannot clearly distinguish these products from alternative products then the additional price would not be justified and consumers would not buy these products.

Regarding the willingness to pay, the customer interviewed are willing to pay about 31% more for low-level vegetables with reduced levels of chemicals and about 30% more for products with reduced pesticide levels. Although by comparing the level of importance accorded, the reduced level of chemicals was estimated to be more than pesticide reduction, the willingness to pay is approximately the same.

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