

# Consumer Awareness of Organic Vegetables in Vietnam: An Application of Ordered Logit Model

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## 1. Introduction

Organic agriculture has been increasing in recent years. The world's organic production land reached 37.2 million ha (0.9% of total agricultural land) in 2011 [1], while the organic market has expanded at annual average of 15% to 20% [2]. Consumer's perception of organic is the first step in developing the organic demand [3]. One of the most important reasons for the limitation of organic market in developing countries like Vietnam is due to the people's low perception of organic foods.

Few studies about the awareness of Vietnamese people toward organic products; however those evaluations about perception of organic foods are still inadequate. Especially, none of previous studies explore factors that influence on Vietnamese consumer's perception level of organic food. The present study examined consumer's perception, and identified psychological as well as socio-demographic factors affecting the awareness of organic vegetables in Hanoi capital of Vietnam.

## 2. Data and Methods

### 1) Data collection

A face-to-face interview with the consumers at four big supermarkets in Hanoi center was deployed from September to October 2012. In this study, we only collected the consumers who have been working to generate income. From 202 respondents asked, only 185 were valid to analyze. Consumer perception of organic vegetables will be classified as three levels: never-heard (consumers who never heard about organic vegetable term), heard but not understood and understood about organic vegetables.

### 2) Methods

Bivariate analyses and ordered logit model were used to test the hypotheses. First, bivariate tests (including Chi-square and Kruskal-Wallis tests) helped to draw consumers' profiles over groups. Second, we used ordered logit model to analyze factors that influence on consumer perception of organic vegetables.

## 3. Results and Discussion

### 1) The consumer's perception of organic vegetables

The results show that only 13% of the consumers in Hanoi understood about organic vegetables, while the number of people who already heard of organic but not understood accounted for 50% (Table 1). These estimates are comparable with previous estimates [4]. One of the most important reasons causing the lack of the consumer's perception of organic foods is limited information [5].

Table 1 Characters of respondents over groups

Variables	Perception of organic vegetables by groups			Sig. of difference Tests
	Never-heard n=68 (37%)	Heard but not understood n=92 (50%)	Understood n=25 (13%)	
Average age (years)	34.5	34.5	37.7	0.238 <sup>a</sup>
Gender				0.807 <sup>b</sup>
Male	27%	23%	28%	
Female	73%	77%	72%	
Education (years of schooling)	13.3	15.0	15.0	0.007 <sup>a</sup>
Monthly household income (000 VND <sup>m</sup> )				0.441 <sup>a</sup>
<8,000				
8,000–15,000	28%	24%	20%	
>15,000	48%	54%	44%	
	24%	22%	36%	

Note: <sup>a</sup>Kruskal-Wallis test, <sup>b</sup>Chi-square test

<sup>m</sup>Exchange interest rate was rounded at 20,000 VND for one USD in September and October 2012

## 2) Factors influencing on the consumer's perception of organic vegetables

Table 2 indicates that label concern of the consumers had the strongest and directly positive influence on their awareness of organic products, followed by government staff and the belief in availability of organic foods.

Table 2 Estimates from ordered logit models

	Coef.	SE
Safety	-0.38*	0.22
Orga_avai	1.11***	0.32
Label_recog	1.54***	0.30
Edu	0.10*	0.05
Age	0.04**	0.02
Job_gov	1.37***	0.44
Job_manager	1.08*	0.58
Number of obs	185	
Log likelihood	-142.58	
LR chi2	79.56***	
Pseudo R <sup>2</sup>	0.22	
McKelvey&Zavoina's R <sup>2</sup>	0.42	
Count R <sup>2</sup>	0.63	
Brant test: chi2(7)=8.12	p=0.322	

Note: \*, \*\* and \*\*\* indicate 10%, 5% and 1% significance level respectively

## Reference

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Meanwhile, the consumer's education and age were also found to be positively significant like other findings [6], but their impacts on the perception of organic were small compared with other variables. Finally, the occupation difference was associated with different perception of organic term. Specifically, the government staffs held better awareness of organic foods compared with other positions.

## 4. Conclusions

In summary, these findings show that the Hanoi consumer's perception of organic foods is limited due to the lack of information or inadequate information about organic products. Psychological factors including attention to label/origin of products and belief in availability of organic foods and occupation play important roles in the people's awareness of these products.

Therefore, information about organic foods should be publicized widely and concentrated on psychological aspects of the consumers. Besides, clear label certification under strict control systems and market segmentation over occupation should be also considered by the government and retailers.