

Consumer Perception of Organic Animal-based Foods in Colombo District, Sri Lanka

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Abstract- Due to concerns about non-communicable diseases, animal welfare, and the organic animal product sector have become emerging trends in the world as well as in Sri Lanka. As very little is known about consumer perception about organic animal products, a survey was conducted in Colombo district, Sri Lanka together with 178 respondents. Five supermarkets and one organic selling place (Good market) were used for the survey. By using the chi-square method, the effect of each demographic character on awareness and purchasing behaviour about organic animal products was evaluated. Out of total respondents, 51% of respondents reported that they did not hear about organic animal products. Only 49% of respondents had heard about organic animal products. Among 49% of respondents, only 61% of respondents were buyers and 37% were non-buyers. The majority of the organic animal products buyers were in middle age (31-45 years old), well-educated, and had higher family income over 100,000 LKR. The higher price was reported as a barrier to purchase organic animal products. The majority of the respondents believed that organic animal products do not contain residues of pesticides, antibiotics, and medications, as well as majority of respondents, believed that there was no difference in taste between organically and conventionally produced animal products. At present in Sri Lanka, certified organic animal products are not available. Therefore, out of total buyers, 98% of respondents had been misled the term organic and they purchased free-range animal products.

Keywords: Organic, Consumer perception, Animal products, Colombo district

I. INTRODUCTION

In recent years, conventional livestock farming has been increased due to the high performances of farm animals and less production cost. Meanwhile, intensification of production leads to issues of animal health, animal welfare, and environmentally friendly production. As a response to these issues, organic livestock farming was introduced a few decades back. The increase of interest in organic food throughout the world is a response to concerns about the intensive agricultural practices and their effects on consumers' health and the environment (Yiridoe *et al.*, 2010). Therefore, demand for organically produced animal-based products is increasing in all over the world due to positive effect on human health as well as positive effect on the environment.

The livestock-based food production system has been directed towards conventional farming practices through extensive use of pesticides, herbicides, feed additives, different detergents, chemicals, and medications. According to the Sri Lankan context, there is an ongoing faster development in the organic sector in the country. At present out of the total agricultural lands, the organic agricultural lands are about 96,318 ha in Sri Lanka and Sri Lanka is in the top ten countries with the highest increase in organic agricultural lands (Willer *et al.*, 2018)

Many studies have been conducted on consumer perception towards organic foods in Europe and Western countries, notably the USA, Australia, and New Zealand (Roitner-Schobesberger *et al.*, 2008). However, there are very few studies carried out in Asian countries about consumer perception towards organic foods. At present, organic

vegetables and fruits are available all over Sri Lanka. But there is very little attention on organic livestock-based food production systems in Sri Lanka. Furthermore, all most all the publications available in relation to organic farming in Sri Lanka are on organic field crops, plantation crops, export agricultural crops, and organic manure preparation. There is no any proper investigation carried out in relation to consumer perceptions on organic animal-based food products in Sri Lanka. Therefore, the problem statement which was investigated in the current study was consumer perception about organic-based animal products in Colombo district, Sri Lanka.

II. LITRETURE REVIEW

The organic animal production sector is a subsector of organic foods, which does not contain residues of antibiotics, disinfectants, and veterinary medications. Due to the prevalence of non-communicable diseases and concerns on animal health, the demand for organic animal products has been increased in the world (Gifford and Bernard, 2006).

A. Consumer perception towards the organic foods

At present rather than just consuming foods for the hunger, consumers think on food safety, the impact of foods on human health and the environment (Fillion and Arazi, 2002). As a response to these considerations, organic foods have become more popular in the world.

Some studies have shown that, normally organic food buyers are well educated, affluent as well as they belong to a higher social class (Padel and Foster, 2005; Stobbelaar *et al.*, 2007; Shafie and Rennie, 2012). A similar study has also revealed that there is a positive correlation between consumption of organic foods and level of formal education (Lockie *et al.*, 2002). Ureña *et al.* (2008) described that there are three types of organic food consumers based on the frequency of consumption as regular, occasional and non-consumers. In the above study among total consumers, 12% of them were represented by regular consumers, 42% were occasional consumers, and the remaining 46% were represented by non-consumers. However, among non- consumers, 25% had an intention to buy organic foods in future.

B. Consumers' willingness to pay for organic foods

Generally, consumers have to pay a premium price for organic foods. Organic food consumers are generally elder, come from tertiary educated households, and have higher income with compared to non-consumers of organic foods (Padel and Foster, 2005; Roitner-Schobesberger *et al.*, 2008). Wandel and Bugge (1997) have found that there is no significant effect of income and occupation on consumer perception towards organic animal foods. Organic food consumers are motivated to increase their purchasing frequency, by improving the sensitivity and availability of organic foods (Woese *et al.*, 1997).

C. Comparison of nutritional properties and sensory properties of organic animal products and conventional animal products

There are several researchers carried out to compare nutritional qualities and sensory qualities in between organic animal products and conventional animal products. Lund (1991) showed that there are no major differences between organically produced milk and conventionally produced milk. Inorganic pig production, the exclusion of synthetic amino acid supplementation from the diet has been caused to increase the intramuscular fat content in pigs (Sundrum *et al.*, 2000).

III. METHODOLOGY

A. Questionnaire preparation

The questionnaire was designed to gather exploratory data about consumer perception of organic animal-based foods in Colombo district, Sri Lanka with the help of experts in organic farming.

B. Structure of the questionnaire

The questionnaire was composed with four main categories. In the first category, basic demographic information of respondents was collected. In the second category, respondents who indicated as "never heard about organic animal products" were categorized separately. The respondents who indicated "heard about organic animal products" were asked whether they agree or disagree with several statements regarding their knowledge about organic animal foods.

In the third category, the respondents who indicated "heard about organic animal products" were divided into two parts based on whether they

purchase organic animal-based foods or not. Respondents who indicated as “non- buyers” were categorized as “heard about organic animal-based foods and non- buyers”. Furthermore, respondents who indicated as “buyers” were categorized as “heard about organic animal foods and buyers”. In the fourth category, respondents were asked to indicate any suggestions to improve organic animal-based foods in Sri Lanka.

C. Sampling and data collection

The current study was carried out in Colombo district, Sri Lanka. For this study, five supermarkets and one organic food selling place (Good Market) were selected to approach different customer types. Five supermarkets were selected randomly from different cities of the Colombo district, Sri Lanka. It was done in order to include a different range of customer types into this study as well as to cover up the entire Colombo district, Sri Lanka. One organic food selling open market; Good Market was selected because it is the main organic food selling market in Colombo district, Sri Lanka. Twenty customers were interviewed from each supermarket. All together 100 customers were interviewed from 5 supermarkets and 100 customers were interviewed from the organic market. Finally, 200 customers were interviewed in this study. Customers were approached randomly. Out of the total questionnaires, usable questionnaires were 178 questionnaires representing an 89% of successful response rate.

D. Data analysis

Data were collected from November 2018 to January 2019. The collected data were summarized by using the Microsoft excel office package (2016) and SPSS software (Version 22). By using the chi-square method, the effect of each demographic character on awareness and purchasing behavior about organic animal-based foods was measured. The respondents except the respondents, who indicated as “never heard about organic animal products” were presented with different statements and those data were analyzed descriptively by using Microsoft excel package (2016).

IV. RESULTS AND DISCUSSION

The profile of the sample respondents is shown in Table 01. Out of total respondents, 49% of them claimed that, they had heard about organic animal products and the rest (51%) were not heard about organic animal products. Among the 49%, sixty-

one (61%) of them were buyers of organic animal products and 37% were non-buyers of organic animal products. The majority of the respondents, who purchased organic animal products, were 31-45 years old, whereas, majority of the non-buyers of organic animal products were fallen in to the age between 15-30 years old. Respondents, those who purchase organic animal products have an income over 100,000 LKR while, majority of the non-buyers of organic animal products have a monthly income between 50,000-100,000 LKR. Majority of the respondents with lower income level (<20,000 LKR), lower education level and age between 15-30 years and more than 60 years, have not heard about organic animal products. Above findings were similar to already published researches of Padel and Foster (2005) and Roitner-Schobesberger *et al.* (2008) and they exhibited that, organic food consumers are generally older, come from tertiary educated household and have higher income with compared to non-consumers of organic foods. Out of the total respondents, un-employers and school students have very poor awareness about organic animal products. Regarding the gender, the category of who have “never heard about organic animal products” was mainly represented by male (56%) over female.

Out of total organic animal products buyers, 51% of respondents tend to be graduates or undergraduates. Meanwhile, 36% of respondents tend to be post-graduates. Therefore, it could be argued that, majority of the organic animal products buyers are well educated. Some studies also have shown that normally organic food buyers are well educated, affluent as well as they are from a higher social class (Padel and Foster, 2005; Stobbelaar *et al.*, 2007). In addition, another study has emphasized that, there is a positive correlation between consumption of organic foods and level of formal education (Lockie *et al.*, 2002). Regarding the occupation, the majority of the organic animal products buyers (34%) were in the government sector. Out of organic animal products buyers, 38% of respondents had four members in their family. There were two types of respondents based on awareness about organic animal-based foods. Those two groups were ‘respondents, who had heard about organic animal-based foods’ and ‘respondents, who never heard about organic animal-based foods. The effect of each demographic character on awareness about organic animal products was measured to identify whether there was a significant effect of demographic characters on awareness on organic animal products (Table 02).

Except for age and gender, all other demographic characters have significant differences with the awareness about organic animal-based products. But Wandel and Bugge (1997) has provided evidences, which are incompatible with these findings, and found that there is no significant difference between income and occupation with the consumer perception towards organic animal foods. There were two types of respondents based on purchasing behaviour. One category was identified as 'respondents, who have heard about organic animal

demographic character on the purchasing behaviour of organic animal products was measured to identify whether there was a significant effect of demographic characters on the purchasing behaviour of organic animal products (Table 03). Except for the educational level, all other demographic characters do not show significant differences with the purchasing behaviour on organic animal-based products. The above finding was supported by some researchers and they have revealed that organic food buyers are well educated (Padel and Foster, 2005; Stobbelaar *et al.*, 2007).

Table 01: Demographic characters and awareness about organic animal-based foods

Demographic character	Number of interviewees	Never heard	Heard, non-buyers	Heard, buyers
Age				
15-30 years	72	59.7%	20.8%	16.6%
31-45 years	47	36.2%	17.0%	46.8%
46-60 years	38	47.4%	18.4%	34.2%
>60 years	21	57.1%	9.5%	28.6%
Gender				
Male	87	44.8%	20.7%	33.3%
Female	89	55.5%	15.6%	26.6%
Family size				
Two	1	-	100.0%	-
Three	26	26.9%	19.2%	53.8%
Four	84	53.6%	21.4%	23.8%
Five or more	67	56.7%	11.9%	28.3%
Occupation				
Government sector	31	22.6%	16.1%	58.1%
Private sector	49	51.0%	16.3%	32.6%
Own business	31	48.4%	22.6%	29.0%
Retired	19	47.4%	10.5%	36.8%
Unemployed	8	87.5%	12.5%	-
Still schooling	22	77.3%	13.6%	4.5%
Other	18	55.6%	33.3%	11.1%
Education Level				
Up to G.C.E. O/L	41	85.4%	2.4%	9.8%
Up to G.C.E. A/L	62	74.2%	21.0%	4.8%
Undergraduate/ graduate	51	15.7%	29.4%	53.0%
Postgraduate	24	4.2%	12.5%	79.2%
Monthly family income				
< 20,000 LKR	4	100.0%	-	-
20,000- 50,000 LKR	26	57.7%	23.1%	19.2%
50,000-100,000 LKR	84	60.7%	16.6%	21.4%
>100,000 LKR	63	31.7%	19.0%	47.6%

Note - The missing percentage did not give an answer

products but non- buyers. Another category was 'respondents, who have heard about organic animal products and buyers. The effect of each

Table 02: Demographic characters and awareness about organic animal-based foods

Demographic character	Chi-square value	Awareness
Age	7.25	Ns
Gender	2.27	Ns
Family size	8.29	*
Occupation	22.15	*
Educational level	81.18	*
Monthly family income	16.82	*

Note: *Denotes significance at $p < 0.05$; NS denotes not significant

Table 03: Demographic characters and purchasing behaviour of organic animal-based foods

Demographic character	Chi-square value	Awareness
Age	7.25	Ns
Gender	2.27	Ns
Family size	8.29	*
Occupation	22.15	*
Educational level	81.18	*
Monthly family income	16.82	*

Note: *Denotes significance at $p < 0.05$; NS denotes not significant

The respondents, who had heard about 'organic animal-based foods' were asked to provide their general opinion and knowledge on organic animal products by indicating whether they agree or disagree (Table 04). Out of the total respondents, around 70% of respondents strongly agreed with the statement that 'organic farming is good for the environment'. A similar study was conducted in Bangkok, Thailand has also found that around 90% of respondents agree with the statement that 'organic farming is good for the environment' (Roitner-Schobesberger *et al.*, 2008). All most half of the interviews of the current study agreed with the statement that 'organic animal products are the same as natural/traditional animal products' with ensuring the majority of them in a misconception about organic animal products. Similarly, Roitner-Schobesberger *et al.* (2008) have also observed that around 65% of respondents were in a misconception that natural/traditional products are the same as organic products. Out of the total respondents, 90% of respondents agreed with the statement that organic animal products do not contain any residues of pesticides or herbicides.

Roitner-Schobesberger *et al.* (2008) have also found that, majority of the respondents (72%) accepted that, organic products do not contain pesticide residues or any other residues of synthetic chemicals. Another study has also revealed that organic foods contain only one third of pesticide residues with respect to conventional foods (Baker *et al.*, 2002). In the current study, the majority of the respondents accepted that organic animal products do not contain antibiotics, disinfectants, hormones, veterinary drugs, and GMOs (Magnusson *et al.*, 2004; Arvola *et al.*, 2008). There were positive attitudes on organic foods among consumers with compared to genetically modified foods. Many European studies have also emphasized that consumers have negative attitudes about genetically modified foods (Grunert *et al.*, 2000; Gifford and Bernard, 2005). But, Woese *et al.* (1997) have shown that there is no difference in pesticide residues between organic and conventional animal products. More than half of the respondents (80%) were in the opinion that, organic animal products are more nutritious. But Lund (1991) has shown that, there are no major differences between organically produced milk and conventionally produced milk. According to many studies, which have been conducted about consumer perception towards organic foods, have found that the higher price is the main reason for not consuming organic foods (Padel & Foster, 2005). The respondents who had heard about organic animal products as well as already purchasing organic animal products were asked nutritional quality, sensory quality and some other related questions about organic animal products (Table 05). Out of total consumers, 68% of them indicated that organic animal products are better in quality than conventional animal products. In organic pig production the exclusion of synthetic amino acid supplementation from the diet has been caused to increase the intramuscular fat content in pigs (Sundrum *et al.*, 2000). The enhancement of intramuscular fat content increases the eating quality characteristics of meat. None of the organic animal product buyers indicated that conventional animal products better in quality or tasty than organic animal products.

Table 04: Assessment of general knowledge and opinion towards the organic animal-based foods by the respondents who had 'heard about organic animal-based food' (n=87)

Statement	Strongly agree	Agree	Fair	Disagree	Strongly disagree
Organic farming is good for environment.	69%	29%	1%	-	-
Organic animal-based foods are same as traditional/natural animal foods.	14 %	39%	8%	32 %	6 %
Organic animal foods never contained genetically modified organisms. (GMO)	16%	56%	17%	1%	5%
Organic animal products do not contain any pesticide or herbicide residues.	29%	61%	8%	1%	-
Organic animal products are more nutritious over conventional animal products	29%	51%	16%	3%	-
Higher price of organic animal products is a barrier to buy them	52%	44%	-	3%	-

Note - The missing percentage did not give an answer

Table 05: Assessment about organic animal-based foods by the respondents who have heard of 'organic animal-based foods and buyers of organic animal-based foods' in percent (n=53)

Statement	Yes, I agree	Undecided	No, I disagree
I think there is a difference between organic animal products and conventional animal products.	91%	8%	-
I am happy about accessibility to organic animal products in Sri Lanka.	17%	26%	55%
I feel organic animal products are in better in quality than conventional animal products.	68%	30%	-
I feel organic animal products are better in taste than conventional animal products.	86%	11%	-

Note - The missing percentage did not give an answer

Moreover, Roitner-Schobesberger *et al.* (2008) have also shown that most of the buyers believe that, organic foods are better in taste. However, Fillion and Arazi (2002) have found that there is no difference in taste between organic milk and conventional milk. The respondents who have heard about organic animal products but non-buyers were asked why they do not purchase organic animal products (Table 06).

awareness on organic animal products for school children.

Table 06: Assessment of statements about organic animal-based foods by the respondents who have heard of organic animal-based foods and non- buyers of organic animal-based foods' (n =32)

Statement	Yes, I agree	Undecided	No, I disagree
Organic animal products are too expensive	94%	6%	-
Organic animal products can afford only in upper class consumers	81%	6%	13 %
Organic animal products are not available in everywhere	94%	6%	-
I don't feel organic animal products are better than conventional animal products.	9%	16%	75%
I am confused on certification regarding organic animal products in Sri Lanka	50%	38%	-

Note - The missing percentage did not give an answer

Majority of the respondents claimed that, organic animal-based foods are too expensive and not commonly available to purchase. Moreover, all most half of the respondents emphasized that, they were not satisfied about the certification procedures of Sri Lanka.

V. CONCLUSION

Majority of the respondents have very poor awareness on organic animal products. Furthermore, majority of the organic animal product buyers were in middle age (31-45 years), well-educated and having a monthly income over 100,000 LKR. However, real organic animal products are not available in Sri Lanka. Therefore, around 99% of organic animal products buyers have a misconception that, they purchase organic animal products and actually, they purchase free-range animal products. Government should involve improving the awareness about organic animal products, through conducting awareness programs. Subject on organic animal products need to include into school syllabus to improve the

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