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WILLINGNESS TO PAY FOR LOCALLY PRODUCED ORGANIC FOODS BY URBAN CONSUMERS IN SRI LANKA

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Abstract: Organic food consumption is gradually increasing among Sri Lankan consumers due to an increased awareness on healthy food. Some consumers ready to pay more for organic food, but it varies according to many factors. Therefore, the main objective of this study was to evaluate the urban consumers' willingness to pay (WTP) for organically produced food in Sri Lanka. The specific objectives of the research were to investigate the socio-economic factors, the level of awareness on organic food, the present situation of buying, and the level of additional price ready to pay and analyze the impact of socio-economic factors on consumers' willingness to pay. The research was conducted in urban Sri Lanka, covering capital cities of six urban districts of the country; Colombo, Galle, Gampaha, Kandy, Kurunegala, and Rathnapura. Data were collected from November 2016 to May 2018, from 600 consumers, by selecting 100 consumers per city. Data analyses employed were a descriptive analysis and binary logistic regression. Results revealed that, the most of the consumers were females, married, and with a comparatively higher level of education and monthly income. Most consumers had a significant level of awareness about organic food. A lesser proportion of consumers (24%) buys organic food at present, while the majority (52.4%) was willing to pay an extra price. Out of these consumers, the highest percentage (29.3%) prefers to pay 26% to 50% premium prices. As per the results of logistic regression, age, gender, monthly income, and education were the deciding factors for consumers' willingness to pay a premium price for organic food. Results of this research are helpful for the development of production and marketing strategies and awareness programs for urban consumers on local organic food products.

Keywords: Local organic food, willingness to pay, urban consumer, organic market, Sri Lanka.
(JEL Classification: Q1, Q13)

INTRODUCTION

Organic food can be described as the food that is grown, and stored or processed without using chemical fertilizers or harmful agrochemical such as pesticides, herbicides, growth hormones, and generic modification (Essoussi and Zahaf, 2008). According to the Food and Agriculture Organization (FAO) (2007), organic food should only use organic production methods and management practices which need to achieve sustainable productivity. Thus, it uses pest, weed, and disease control methods along with a different mixture of mutually dependent life forms, recycling plant and animal remains, water management practices, crop rotation and selection, and tillage and cultivation.

The use of organic food has increased rapidly, in developed as well as developing countries. The rising purchasing pattern causes for the increasing level of consumer awareness on food safety and health concerns. Many reasons are contributing to this organic food market trend. Most consumers believe that organic food can provide individual and social values for themselves and also their families. Health factor composed of environmental and animal welfare factors is one of the most significant reasons for choosing organic food. The rapid development in organic food markets has created high interest among consumers, researchers, and businessmen although it comprises a small percentage of the food market.

Organic food is becoming popular with creating a growing market segment for the consumers who are ready to pay a

premium price for them. The premium price is the extra cost charged on organic food over conventional food (Shafie and Rennie, 2012). Nonetheless, consumers prefer to pay an additional payment due to health concerns and other values of organic food. The purchasing decision of consumers often depends on different aspects such as knowledge, intention, and attitude. Knowledge on products and their advantages affects consumers' WTP for organic products and the level of knowledge of them depends on the information available for them.

Findings of many researches have reported the premium price that organic food consumers are ready to pay. The most of researchers in USA and European Union have shown that the consumers are ready to do an extra payment of 10 - 40% for organically grown products. Yiridoe et al. (2005) observed that, the demand for organic products depends more on the price difference between organic and conventional food than the actual price of organic food. Research in Croatia revealed that, the most of consumers are ready to pay a premium price of 11-20% (Radman 2005). According to a study in Iran on WTP for organically grown products, most consumers were ready to pay a premium price for organic products in different levels. While 55% willing to pay premium price between 5 to 24%, 10% were willing to pay higher than 35% for organic food than conventional food (Haghioui et al., 2013).

In London, most of the households were ready to pay premium prices for organic goods (Griffith and Nesheim (2008), while in Spain, only real organic food consumers indicated a positive attitude on organic food and they were ready to pay a premium price for organic food (Gil, 2000). As per Rodríguez et al., (2007), in Argentina, a positive attitude exists on organic products, and consumers are willing to pay premium prices to acquire good quality products.

The study conducted by Aryal et al., (2009) reported that, 28% of the consumers considered in the study were ready to pay up to 20% Premium price compared with conventional food. Furthermore, 13% of them were ready to pay premium price in between 20-50%. However, 59% of them were not ready to pay more than a 10% premium price for organic food. Asadi et al., (2009) revealed that, most of consumers in Iran were not ready to pay a premium price above 20%. Furthermore, Millock et al., (2002) recorded that, while 35% of consumers in Denmark were willing to pay a premium price for organic food, 18% of them were not ready to pay for any kind of premium price.

According to Joyce et al., (2011), 89% of the consumers in Tanzania knew about organic food. Most of them were with high income, older, and educated categories. The majority of them (83%) have noted a taste difference between conventional and organic foods. Also, the majority of them (87%) were ready to buy organic food, while 78% of them were willing to pay an extra price for organic food. Moreover, majority of them (86%) like to experience home delivery of organic food. Based on a research study, Muhammad et al., (2015) reported that consumers' willingness to pay for organic food is affected by their socio-economic factors like age, education, nationality, household size, and monthly income. Nationality is a new variable that influences consumers' willingness to pay for organic food.

In Asian countries, the demand for organic food has grown by 15 to 20% per annum during the last decade (Helga and Lukas, 2009; Mohamed et al., 2014). According to research findings of Aryal et al., (2009), the majority of consumers (90%) in Kathmandu valley are aware of organic products, but awareness of consumers differs according to the diverse characteristics of consumers. The study also revealed that, around 42% of the respondents selected organic vegetables as their best choice, and only 10% of consumers favored organic rice as their best choice. The principal reasons for their preferences were health (75%), palatability & taste (18%), and freshness and good appearance (7%). The study of Gumber and Rana, (2017) in India reported that, consumer characteristics such as education and income level have positively influenced the WTP premium price for organic food.

In Sri Lankan context, the study on "consumer WTP for selected organic vegetables in Kandy district" has revealed that, most respondents were aware of organic products and it has influenced the consumption of organic food. Besides, the income of the household, years of education has significantly affected on WTP for organic products. According to Piyasiri and Ariyawardana (2002), the majority of consumers consider price as a significant factor. Therefore, the price of organic food should be as much as competitive with conventional foods. Also, some consumers prefer to have organic food with suitable packaging.

The organic food market depends on consumer demand. The number of people who are ready to pay an extra price is gradually increasing. Accordingly, a consumer-oriented approach to understand the market is worth for organic food marketing. Hence, the broad objective of this study was to evaluate the consumers' willingness to pay for organic food in urban Sri Lanka. The specific objectives were the understanding of the socio-economic characteristics of urban consumers, assessment of the level of consumer awareness on organic food, identification of consumers' WTP premium price for organic, determination of the impact of socio-economic factors on consumers' willingness to pay for organic food, and identifying the challenges associated with purchasing of organic food by the consumers.

RESEARCH METHODOLOGY

Research methodology is the process through which researchers want to conduct their research. It displays the way through which these researchers formulate their research problem and objective, plan to carefully, systematically collect and analysis required data and present their result obtained during the study period. It helps to find solutions to a question or recognize a particular phenomenon correctly by going beyond personal experience, thought, feelings and opinion (Johnston 2010).

Accordingly, this study was carried out in capital cities of six districts (Rathnapura, Colombo, Gampaha, Kandy, Kurunegala, and Galle) of Sri Lanka. The main cities of these districts were selected purposively for the study due

to their potential for the presence of organic markets and organic consumers. Four super markets were randomly selected from each city, and the target group was obtained from 25 customers came out from the super market after buying goods. Questionnaires were filled from the customers who were willing to participate in the survey. Data collection was done at 24 super markets (04 super markets from each city), and the sample size was 600 customers (100 from each city). Data were collected in two stages: First, via an online survey for the pilot study (Study one) using ten consumers in September 2016, and then, a consumer survey using the pre-tested questionnaire (Study two) in the selected six cities from November 2016 to May 2018. In the questionnaire, consumers were asked information related to socio-economic characteristics, awareness level related to organic food, information related to the present situation of buying organic food, WTP for organic food, and challenges in purchasing organic food. In data analysis, socio-economic characteristics, the level of awareness, information related to present situation of buying organic food, WTP for organic food, and challenges in purchasing organic food were analyzed using descriptive statistics (frequency analysis, percentages), while factors affecting consumers' WTP premium price was measured using binary logistic regression analysis. Data analysis was conducted using the SPSS software version 21. Table 1 presents the variables applied in binary logistics regression.

Table 1. Variables used in the binary logistic regression analysis

Variable	Measurement	
Dependent variable	WTP premium price	No (0) Yes (1) Not responded (2) Later, these three levels were converted into two levels as 1 for 'yes' and 0 for both 'no' and 'not responded.'
Independent variables	Age	Years
	Gender	Female (1), Male (0)
	Marital status	Married (1), Unmarried (0)
	Educational level	Low (0) Middle (1) High (2)
	Monthly income	Low (0) Middle (1) High (2)

RESULTS AND DISCUSSION

Results of the study are presented in five sections. They are arranged as (1) socio-economic characteristics of consumers, (2) level of consumer awareness, (3) present situation of buying and WTP for organic food, (4) factors affecting for WTP for organic food, and (5) challenges faced by consumers when they purchase organic food at the market.

Socio-economic characteristics of consumers

Socio-economic characteristics of the target group reflect lots of information about them. Therefore, useful information

related to the consumers' gender, age, educational level, marital status, and monthly income were discussed to understand the socio-economic characteristics of urban organic food consumers. Table 2 provides the research findings.

Table 2. Socio- economic characteristics of urban consumers (n=600)

Factor	Category		Frequency	Percent-age
Gender	Male		282	47.0
	Female		318	53.0
Age	18-40 Years		295	49.2
	41-60 Years		272	45.3
	> 60 Years		033	05.5
Marital status	Married		471	79.0
	Unmarried		122	21.0
	Other		007	01.2
Educational level	Primary education	Low	10	01.7
	O/L		45	07.5
	A/L	Medium	237	39.5
	Diploma		59	09.8
	Graduate		212	35.3
	Postgraduate	High	37	06.2
Monthly income (LKR)	Less than 23000	Low	015	02.5
	23000 - 40000		135	22.5
	40001 - 58000		102	17.0
	58001- 85000	Medium	176	29.3
	85001 - 162000		136	22.7
	more than 162000	High	036	06.0

Source: Consumer survey 2016-2018

According to Table 2, majority of respondents were females (53.0%), and many respondents (49.2%) belonged to the age category of 18-40 years. Most of them (79.0%) were married, have received education (39.5%) up to the GCE advanced level (A/L), and the respondents' monthly income ranged Sri Lankan rupees 58000-85000 (approximately US dollars 323 – 473) . Therefore, the majority of respondents were middle-age consumers having a comparatively better level of education and monthly income. In Sri Lanka, frequently, women do the shopping and find healthy food for their families, since the female gets the priority in household purchases than men. Usually, women visit to the markets after their work to buy necessary food items for their families.

Consumers' awareness of organic food

Level of consumers' awareness on organic food was identified according to the consumers' point-of-view using four statements. Table 3 presents the results.

Table 3. Consumers' awareness of organic food (n=600)

Awareness level	Frequency	Percentage
I am not aware of organic food	12	2.0
I have a little level of awareness about organic food	20	3.3
I have a moderate level of awareness about organic food	451	75.2
I have a high level of awareness about organic food	117	19.5

Source: Consumer survey 2016-2018

As per the results, while the majority of consumers (75.2%) had a significant level of awareness about organic food, about one-fifth of them (19.6%) had a good level of awareness. Out of the respondents, only 2.2% was unaware of organic food. As most people are educated, they can understand the general things prevalent in society. This finding corroborates with Bhatta et al. (2009), who has reported that most of the consumers knew about organic food. According to the results, the awareness of organic food diverges based on the type of consumer. Most consumers have thought that the foods are organic unless the growers don't not use chemical pesticides.

Consumers' present situation of buying organic food and WTP in future

Consumers' present situation of buying organic food and WTP for them in future is beneficial. Hence, these factors were studied in detail (Table 4).

Table 4. Consumers' present situation of buying and WTP for organic food in future

Variable	Frequency	Percentage
Present situation of buying (n=600)		
Yes	144	24.0
No	377	62.8
Not responded	79	13.2
Present frequency of buying (n=144)		
Most of the time	23	16.0
Sometimes	39	27.0
Rarely	82	57.0
WTP in future (n=600)		
Yes	314	52.4
No	224	37.3
Not responded	62	10.3

Source: Consumer survey 2016-2018

According to Table 4, although a considerable number of consumers (24%) was buying organic food by that time, the majority was not buying them. Even among the buyers, only a small fraction (16%) purchase them regularly, while others buy occasionally. However, from the whole sample, a higher percentage (52.4%) was willing to pay a premium price for organic food in future, if they are really organic. Somsak and Blut (2012), and Wahida et al. (2012) found similar results in their studies. According to Coulibaly et al. (2011), consumers in West Africa, Ghana, and Benin have agreed to pay a higher price for organic vegetables, while Aryal et al. (2009) reported that consumers are willing to pay additional prices for organic products if they are available.

Consumers' WTP premium price for organic food

Identifying the premium price willing to pay by the consumers is critical for the producers and marketers. Willingness to pay the premium price depends upon the product and consumers' socio-economic factors. Although the majority of consumers were willing to pay a premium price for organic food, the level of premium price varied. Therefore, consumers were inquired to understand their level of preference to pay a premium price, and results are presented in Table 5.

Table 5. Consumers' levels of payment of the premium price for organic food (n=314)

Level of the premium price	Frequency	Percentage
< 10%	44	13.9
10-25%	66	20.9
26-50%	116	36.8
51-75%	51	16.1
76-100%	39	12.3

Source: Consumer survey 2016-2018

Accordingly, out of 314 consumers, a majority (36.8%) of consumers were ready to pay 26 to 50% of premium price. However, 28.4% (16.1+12.3) of the consumers were willing to pay more than 50% of the premium price for organic food, over conventional food. Also, 20.9% of consumers ready to pay 10 to 25% premium prices. In comparison, 13.9% of consumers did not ready to pay more than a 10% premium price for any organic food. This agrees with Aryal and Chaudhary (2009), who denoted that consumers' WTP premium price for organic food based on the product and the consumer. According to Rodiger and Hamm (2019), although normal consumers pay more attention on the price of foods, other motivational factors also play a determining role for their readiness to pay for organic products

Impact of socio-economic factors on consumers' WTP premium price for organic food

Measuring the impact of socio-economic factors on consumers' WTP premium price for organic food is possible by using binary logistic regression analysis. Before the analysis, the joint impact of all predictor variables arranged as dependent variable (WTP premium price) and was analyzed by using the concept of Nagelkerke R², as explained in the model summary (Table 6). It describes the level of variation in the dependent variable that the model could explain.

Table 6. Model summary of binary logistic regression analysis

Model Summary			
Step 1	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
	628.180	.286	.382

As in Table 6, the model summary provides some approximation of R² statistics in logistic regression. The -2 Log Likelihood statistics is 628.180, which is suitable for the model. This statistic shows how the model calculates the consumers' attitude in positive status. The result of Cox and Snell R² indicates that the predictor variable explains 28.6% of the variation in the dependent variable.

Table 7. Goodness-of-fit (Model diagnostic); Hosmer and Lemeshow test

Hosmer and Lemeshow Test			
Step 1	Chi-square	df	Sig.
	6.352	8	.608

As observed from Table 7, the P-value 0.608 is higher than the level of significance at 5%. It can be decided that the data suitably fit the model. Since the p-value is 0.608, which is insignificant, the fitted logistic regression model is a good fit.

Table 8 presents the probability of an event occurring based on a one-unit change in the dependent variable keeping all other independent variables as constants.

Table 8. Results of the logistic regression analysis

		B	S.E.	Wald	df	Sig.	Exp (B)	95% C.I. for EXP(B)*	
								Lower	Upper
Step 1 ^a	Age	-.006	.009	.347	1	.556	.994	.976	1.013
	Gender (1)	.189	.202	.874	1	.350	1.208	.813	1.797
	Marital status(1)	-.092	.289	.101	1	.750	.912	.518	1.607
	Education			118.828	2	.000			
	Educa-tion(1)	-.019	.314	.004	1	.951*	.981	.530	1.816
	Educa-tion(2)	2.216	.314	49.814	1	.000	9.170	4.956	16.968
	Monthly income			19.971	2	.000			
	Monthly income(1)	.817	.253	10.464	1	.001*	2.265	1.380	3.716
	Monthly income(2)	1.087	.250	18.890	1	.000*	2.964	1.816	4.839
	Constant	-1.464	.523	7.838	1	.005	.231		

* Significant at 95% CI-Confidence Interval

As per the results of Table 8, out of the socio-economic characteristics, education and monthly income were significantly affected the consumers' WTP premium price for organic food, since the P-values were less than 0.05 at 95% confidence level. The variables, i.e., education and monthly income, were categorized into three as low, medium, and high. For both variables, the first category (low) was considered as the 'reference category.' Accordingly, consumers in the high educated category are 9.170 times more probable to spend a premium price for organic food, as compared to the consumers in the low educated category.

Similarly, the medium- and high-income earning consumers are 2.265 and 2.964 times more likely to spend the premium price for organic food, respectively, compared to consumers in the low-income category. Discussions with consumers revealed their high concern about their health. The reason there was, they believe most foods they buy are not healthy, but they have adapted to those foods because of their busy lifestyle. Therefore, they are willing to sacrifice

their cost for the healthiness of their families if healthy foods are available.

According to the field observations, there was a high tendency of consumers in higher professions such as doctors, nurses, teachers, and lecturers to buy organic food at a higher price. In some situations, doctors tend to cultivate and promote organic products by facilitating farmers to market their products for consumers; in some cases, they are not considering the premium prices as well. Similar to these findings, Akgungor et al. (2007) stated that urban consumers' are ready to consume organic food and spend premium prices, and the individuals with high income and education are buying organic products than the others.

Challenges in purchasing organic food by the consumers Understanding the challenges against purchasing organically grown food by consumers is a critical, timely factor. Thus, challenges confronted by the consumers when purchasing organic food were studied in detail, and the findings are presented in Table 9.

Table 9. Challenges in buying organic food (n=600)

Constraint	Frequency	Percentage*
Organic foods are costly	516	86
Most organic foods are not available in the market	492	82
Unavailability of continuous supply in the market	474	79
Difficult to trust about organic foods	438	73
The dearth of certification of organic foods	414	69
Lack of market information about organic foods	384	64

Source: Consumer Survey 2016-2018

*These are multiple response questions; one respondent can have more than one option. Therefore, the cumulative percentage could be higher than 100%.

According to Table 9, the main challenge of buying organic food was the high cost related with them. Unavailability and discontinuous supply of organic food products were also significant issues. Unavailability of organic food in the market leads to irregular purchase and consumption patterns, while the lack of a clear and direct market flow of organic food from farmlands to market places leads to an irregular supply. Furthermore, the trust in organic food, problems in certification, and lack of market information negatively affect consumer preference.

CONCLUSIONS

The socio-economic characteristics lead to conclude that young and middle-aged married women take the priority among potential consumers in urban areas for locally-produced

organic food. While most consumers have a significant level of awareness of organic food, a certain percentage of them have a higher level of awareness.

At present, only a small proportion of consumers buy organic food, and a majority of them buy organic food only occasionally. However, most are ready to pay for organic food products in future. Regarding the premium price, while a majority of consumers are ready to pay $\frac{1}{4}$ - $\frac{1}{2}$ additional payment for organic food, another significant amount of consumers are ready to pay more than $\frac{1}{2}$ of additional payment for organically grown food since they consider it as an investment for their health. This is a favorable situation for the development of the organic food marketing of the country. Some markets have made arrangements to sell organic food. However, these facilities need to be formalized by maintaining a continuous supply of organic food in various quantities, considering the demands of different type of consumers, in an attractive manner. It is beneficial to include useful information such as the nutrition composition, health benefits, and the method of preparation on the packet to facilitate consumers to buy organic food at reasonable prices without charging higher rates.

Consumers' level of education and monthly income are significant factors affecting WTP for organic food. There is a trend among educated people towards organic food. Especially doctors buy organic food whenever possible, as they often experience the unfavorable effects of conventional food, shown by their many patients. Some doctors cultivate organic crops for their consumption and advice others to do so.

The main challenges associated with purchasing organic food by the consumers are high cost, unavailability of goods, and lack of continuous supply. Problems related to the trustworthiness on organic products, certification systems, and lack of sufficient market information are also critical and need remedies. Since consumers showed a positive attitude on organic food, the demand for organic food will increase in future. Organic food producers should produce them properly, harvest them at the correct time without destroying the nutritional value and freshness, and certify the food items using suitable certification systems and labeling. These foods should be transported to the relevant markets in regular time durations and sell at reasonable prices, and dissemination of timely market information for the consumer is vital.

The government can arrange many awareness and promotional programs such as exhibitions, advertising, and poster displays, highlighting the benefits of organic food products such as health and eco-friendly qualities, to further encourage consumers towards purchasing organic food products. Programs for school children and their food based on organic food will help to motivate consumers regarding the purchase of organic food in future.

ACKNOWLEDGMENT

This research work was conducted with the support of the Ministry of Agriculture (MOA) and the Sri Lanka Council for Agricultural Research Policy (SLCARP) under Research

Grant number NARP/16/SUSL/AS/01. The author is grateful to all who helped to make the work successful.

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