

# **CONSUMER PREFERENCE AND CONSUMPTION OF ORGANIC PRODUCTS IN THE EASTERN CAPE PROVINCE OF SOUTH AFRICA**

Maggie Kisaka-Lwayo<sup>1</sup> and Ajuruchukwu Obi<sup>1</sup>

<sup>1</sup> Department of Agricultural Economics & Extension, University of Fort Hare, Private Bag X1314, Alice 5700 South Africa.

## **Abstract**

Food purchasing is an important expression of food habits. This paper therefore examines the factors associated with a household's decision to purchase organic food products because such information is not yet available for the study area despite anecdotal evidence of the growing importance of organic products in the country. A randomly chosen sample of 200 consumers in rural and urban areas of the province's two major regions, the former Ciskei and Transkei homeland areas, were enumerated. By means of structured questionnaires, the respondents were interviewed in relation to where they buy their groceries from, the types of foods they bought, their present and future buying patterns, preferred food products, and their reasons for choice of particular food products. In addition, information was obtained on a number of personal characteristics and circumstances of the respondents, including their health status, income, and family circumstances. The study employed descriptive statistics, logistic regression and the standardized discriminant functions to analyze the resulting data. There is evidence of growing interest in organic products in the province, with a sizeable proportion of respondents having consumed or considered consuming organics while only a small number of respondents did not know about the products. Consumers considered organic products healthier and more nutritious with better appearance and taste, affordability and safety. The logistic regression suggests that gender, education, employment, location, price and the person responsible for shopping are important factors in consumer awareness and choice of organic products.

**Keywords: Organic products, consumer preference, logistic model, discriminant function.**

## **1. Introduction**

Organic agriculture offers developing countries a wide range of economic, environment, social and cultural benefits. Global markets for certified organic products have been growing rapidly over the past two decades. In 2006, global certified organic sales were estimated to have reached over 30 billion Euros, a 20 per cent increase over 2005, and are expected to increase to 52 billion Euros by 2012 (UNEP-UNCTAD, 2008). While most sales are in North America and Europe, production is global with developing countries producing and exporting ever-increasing shares. Due to expanding markets and attractive price premiums, numerous studies in Africa, Asia and Latin America indicate that organic farmers earn higher incomes than their conventional counterparts (IFAD, 2003; IFAD, 2005). Moreover, organic products more easily meet the ever stringent requirements on maximum residual levels of synthetic agro-chemicals, as organic standards prohibit their use (FAO, 2009).

Despite phenomenal success of the commercial agricultural sector in South Africa and significant progress in integrating smallholders since democratic reforms, food security concerns remain in South Africa. Recent global increases in food prices have further exacerbated vulnerabilities and make it imperative to examine alternative food production and consumption questions in the country. The World Bank (2010) reports that domestic staple food prices in several countries particularly in Sub-Saharan Africa, experienced double digit increases in 2009. It estimated that the impact on undernourishment or hunger has been as much as 8% in 2009 (World Bank, 2010). Similarly according to Cuesta (2011), global prices of food in July 2011 remained significantly high and are close to the 2008 peak levels, with the World Bank Food Price Index increasing by 33 percent in the last year. Investigating what people buy and the factors influencing their choices is therefore an important policy imperative.

## **2. Objectives**

The broad objective that this paper sets out to address is to determine household buying behaviour in relation to organic food products to fill the existing gap in knowledge about

the market potential of this important food group that is growing in popularity in the country. More specifically, the paper aims:

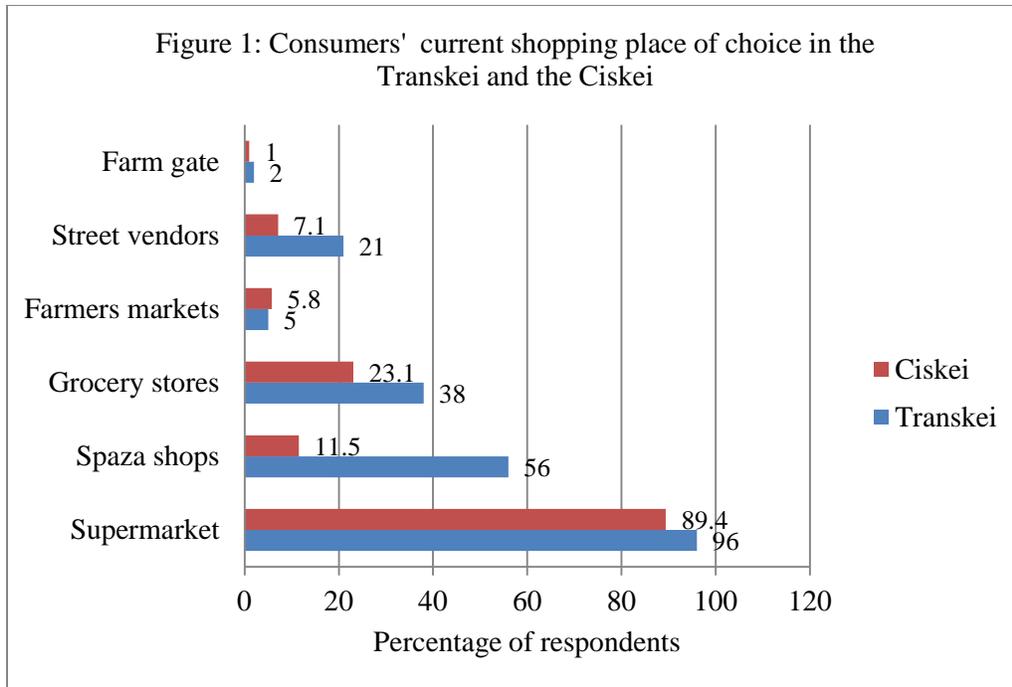
- To explore consumer awareness, perceptions and attitudes regarding organic products;
- To identify the factors that affect the consumer's preference and consumption of organic products.

### **3. The Model and Methods**

A sample of 200 consumers was drawn randomly from rural and urban locations in the two main regions of the Eastern Cape, namely the former Transkei homeland area and the former Ciskei homeland area. By means of structured questionnaires, the respondents were interviewed in relation to where they buy their groceries from, the types of foods they bought, their present and future buying patterns, preferred food products, and their reasons for choice of particular food products. In addition, information was obtained on a number of personal characteristics and circumstances of the respondents, including their health status, income, and family circumstances. The study employed descriptive statistics, logistic regression and the standardized discriminant functions to analyze the resulting data.

### **4. Preference of shopping places in the Eastern Cape**

In order to establish the preferred shopping places for food, consumers were asked to indicate what shop they traditionally buy their groceries from. Six places were identified from past research as: supermarket, spaza shops (which are common in rural areas), Grocery stores, Farmers markets such as the Kei Fresh produce in Mthatha or the farmers market in Wilsonia, East London, Street vendors or the farm gate. Respondents' were free to mark all the choices. An overwhelming majority of the respondents, 96% in the Transkei and 89.4% in the Ciskei, indicated that they bought their food from supermarkets (Figure 1).



In the Transkei, Spaza shops followed in popularity at 56% of the respondents, with Grocery (convenience) stores (38%) and Street vendors (21%) being the least preferred (Figure 1). Only 2% of the respondents in the Transkei and 1% in the Ciskei bought their food from the farm gate. This finding is consistent with information that has established the decline of agriculture generally in the province. In the Ciskei, the second most preferred shopping place is the Grocery stores mentioned by 23.1% of the respondents, followed by Spaza shops (11.5%) (Figure 1). The general conclusion is that most consumers shop in supermarkets, grocery stores and spaza shops. The majority of consumers who shop in supermarkets reported that local shops do not provide the services people demand and that food choice and quality are limited. This is coupled with discount promotions common with supermarkets and variety of products.

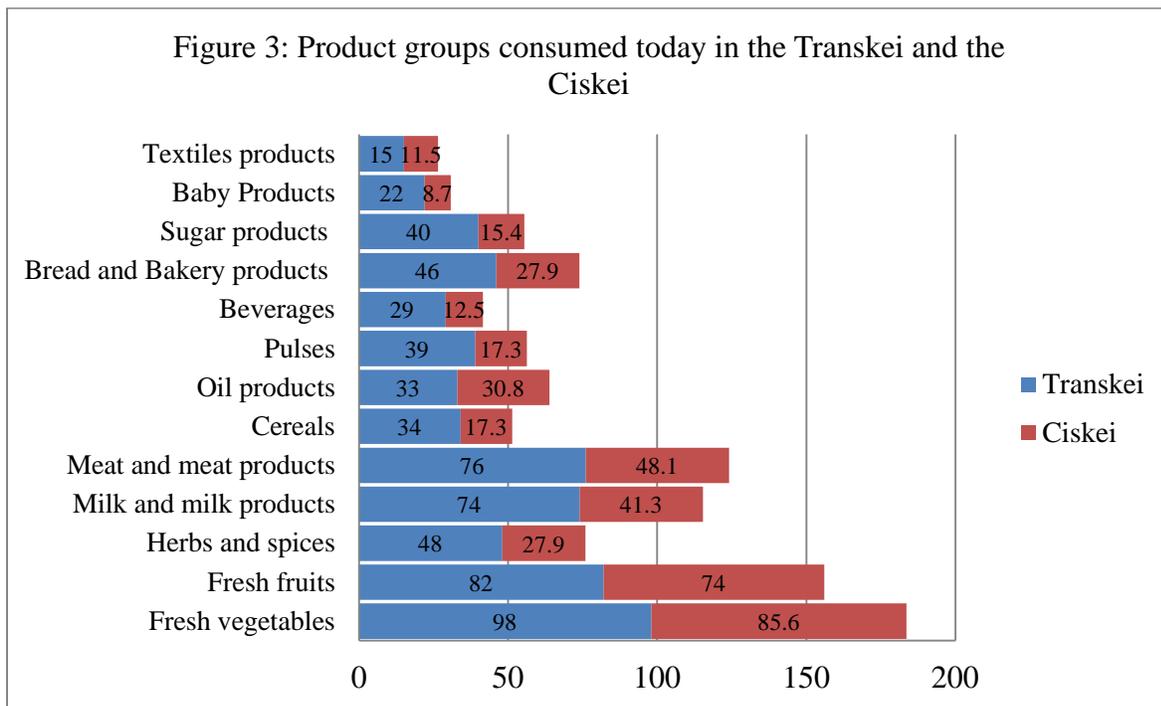
### 5. Product preference among consumers

Figure 2 shows the current organic consumption and demand for organic products. According to Figure 2 majority of the respondents consumed organic fresh vegetables, fresh fruits, meat/meat products and milk/milk products. In the Transkei, 98% of the respondents consumed fresh vegetables while 85.6% of the respondents in the Ciskei

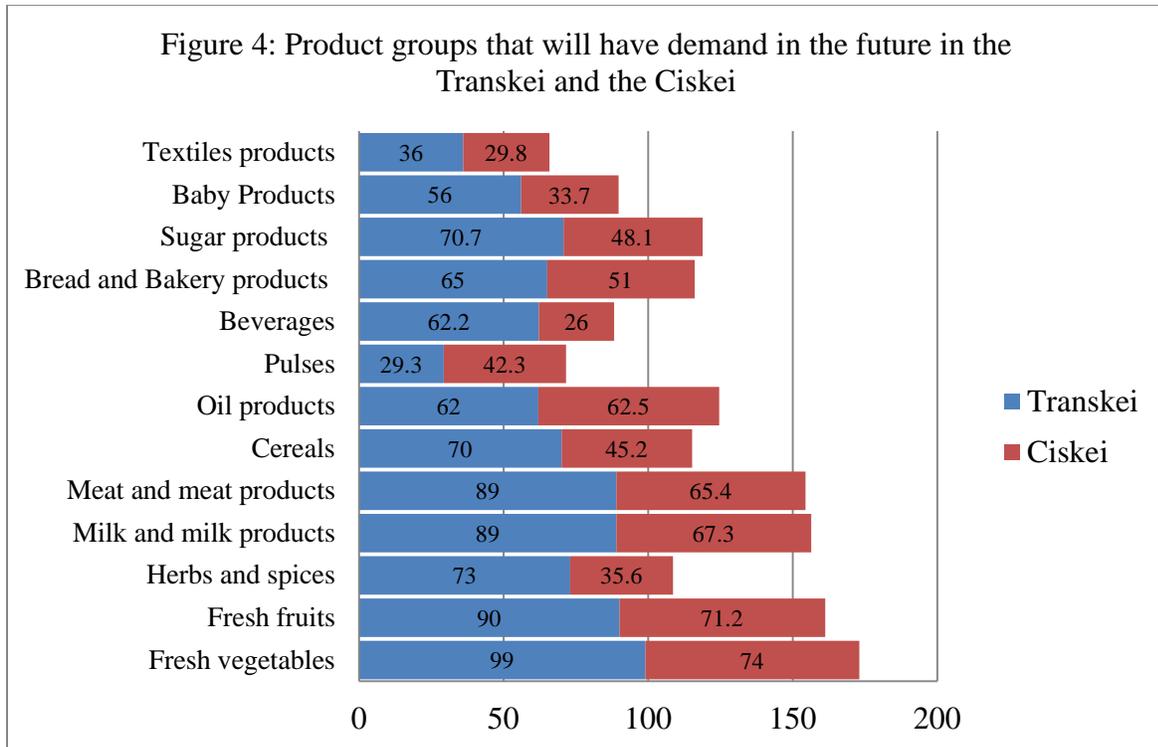
consumed fresh vegetables. Similarly 82% of the respondents in the Transkei consumed fresh organic vegetables while 74% of the respondents in the Ciskei consumed fresh fruits. The third and fourth most consumed organic product were meat and meat products and milk and milk products, respectively.

The results presented in Figure 2 and 3 can be explained by the fact that the organic industry in South Africa is relatively new and the domestic market is limited in the variety of organic products available. In South Africa, food retailers have the largest share of the organic industry. Similarly, most products are sold through the export market due to the higher revenue from foreign exchange. Irwin (2002) says that South Africa has a favourable position for expansion in the domestic market as a result of the following developments in the organic sector over the past few years:

- establishment of separate organic section in major retail stores
- national regulation/standards for organic products
- establishment of South Africa organic certification bodies
- formation of South African organic associations.

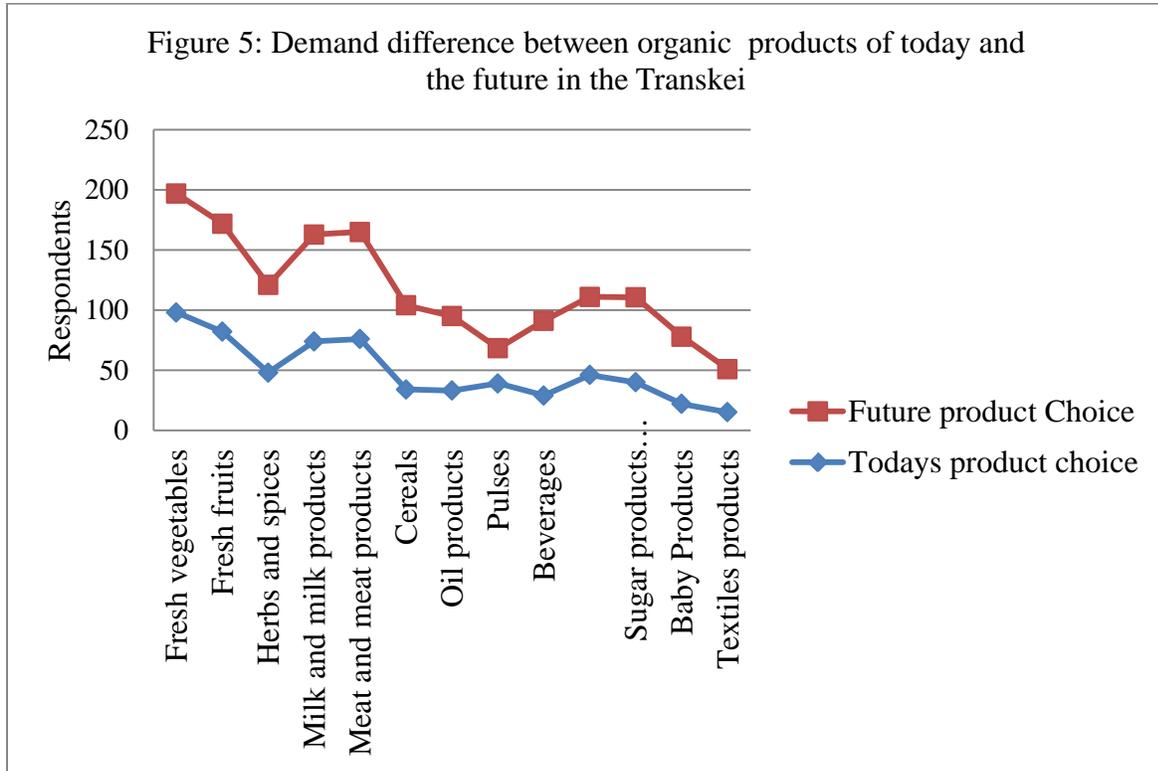


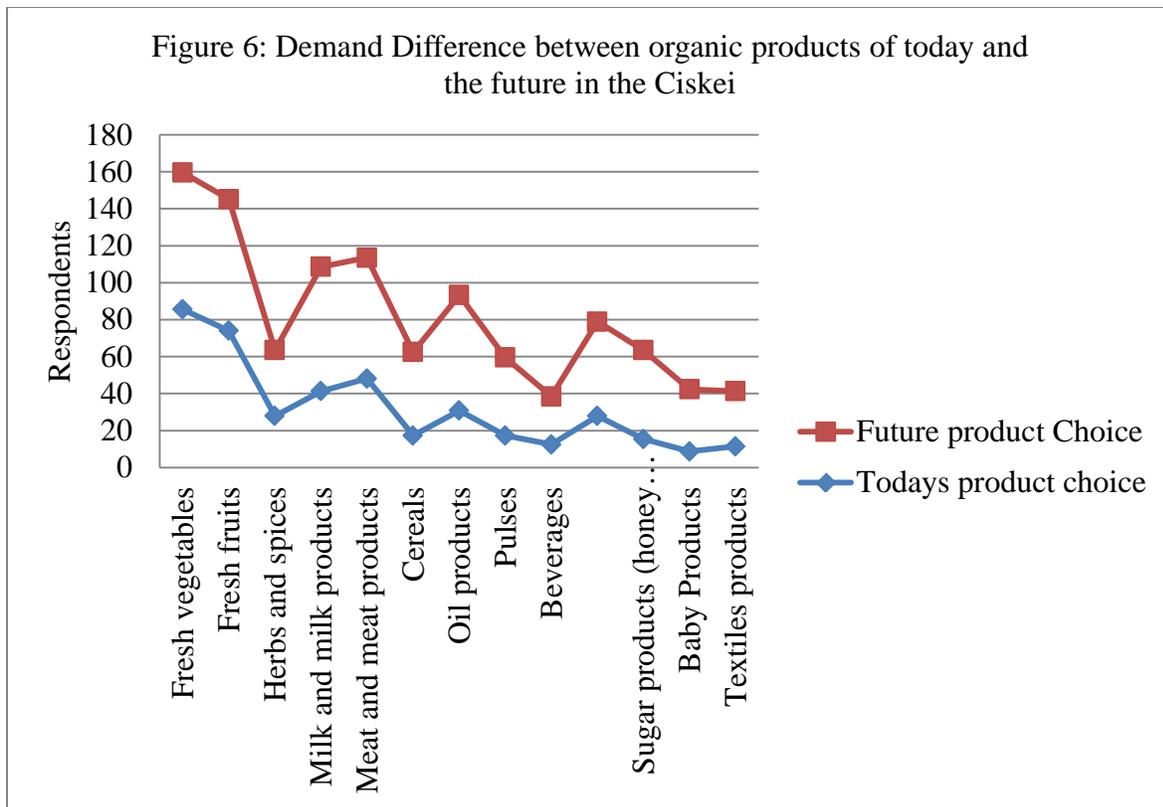
The future potential demand for organic products in the Transkei and the Ciskei is also shown in Figure 4. The trend in Figure 4 showed that the four products with the highest potential demand in the Transkei and the Ciskei in order of priority are Fresh vegetables; fresh fruits; milk and milk products; and meat and meat products. Generally the trend in Figure 4 shows that there are marked increases in the future demand of all organic products. This augurs well for the growth of the organic industry in the Eastern Cape and in South Africa in general. The findings of this study are consistent with Grieshaber, (2005) who stated that on the performance and trends of fresh organic produce showed that fresh produce completely dominated the sales.



A further analysis of the magnitude of the demand differences between products consumed today and the potential demand for organic products in the Transkei and the Ciskei is presented in Figure 5 and Figure 6. It is evident from Figure 6 that there will be a marked increase in demand for fresh vegetables, fresh fruits meat and meat products and milk and milk products in the Transkei. According to GROLINK (2006) the growth in the organic sector has been unparalleled and promoted by the public's increasing

awareness of health and lifestyle issues – for example homeopathy and ‘alternative’ medicines, including nutritional supplements.





## 6. Consumption of organic food

According to Figure 7 a total of 56% of the respondents have ever consumed organic foods in the Transkei while 66% have ever considered consuming organic food. A total of 5% of the consumers have not consumed or considered to consume organic food. A total of 29% of the consumers in the Transkei did not know. In the Ciskei, 35.6% of the consumers had ever consumed organic food, 61.6% had considered ever consuming organic food while 22.1% had not consumed or considered consuming organic food. A total of 15.4% did not know (Figure 7). It is interesting to note that those who had never consumed or never considered consuming organic products, it was now quite important to them to consume organic products after learning what organic products are. This is an indication that the consumption of organic products is closely related to consumer awareness and knowledge of organic products.

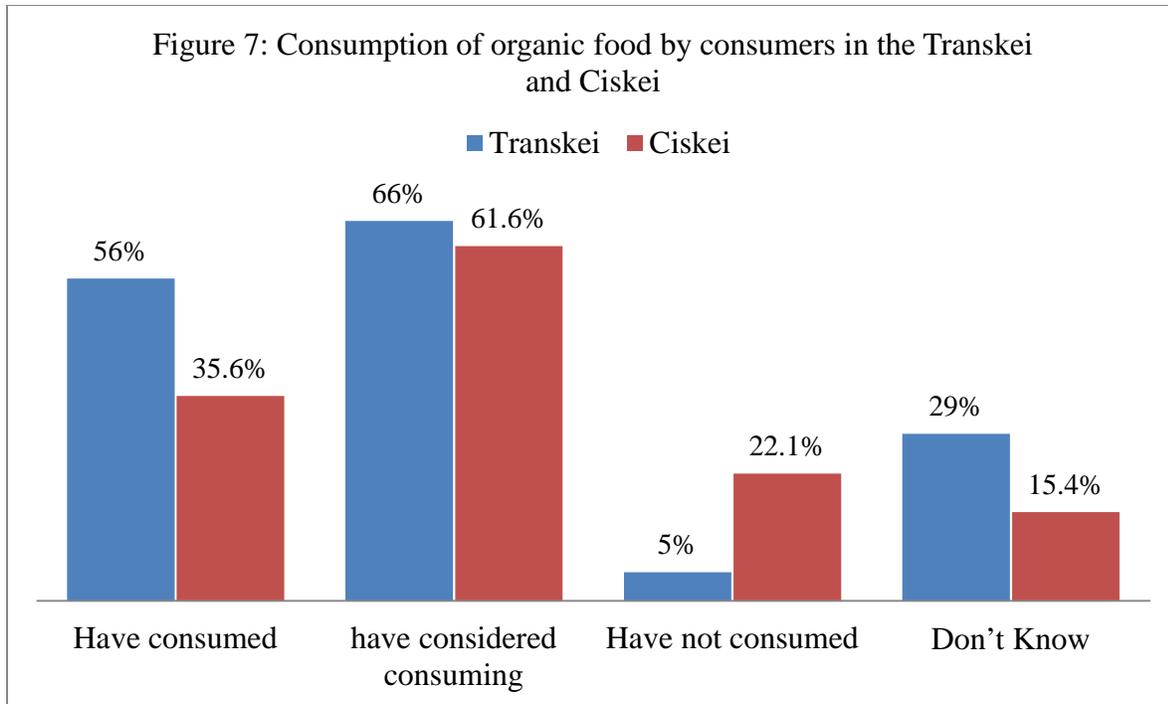
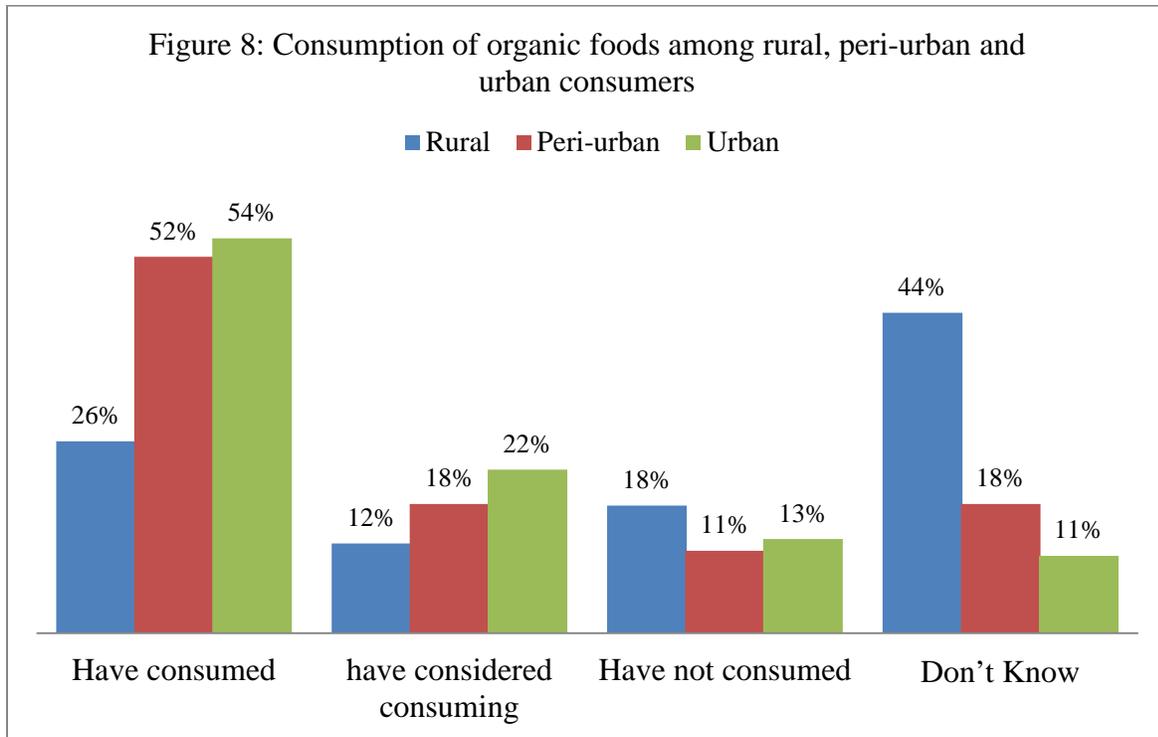


Figure 8 depicts the consumption of organic foods among rural, peri-urban and urban consumers. While 26% of consumers in the rural areas had consumed organic foods, 52% in the peri-urban areas indicated they had consumed organic food while 54% of the respondents in the urban areas had consumed organic food. A low percentage of consumers had considered consuming organic food as well as those who had not consumed organic food. While 12% of the respondents in the rural areas had considered consuming organic food, 18% in the peri-urban areas and 22% in the urban areas had considered consuming organic food. A total of 18%, 11% and 13% of consumers in the rural, peri-urban and urban areas respectively had never consumed or considered consuming organic food. It is important to note that a large percentage of 44% of consumers in the rural areas did not know (Figure 8). Briz and Ward (2009) states that while consumer awareness of organic foods is the first step in developing demand for organic products. Yet awareness does not necessarily equate with consumption. While organic refers to the way agricultural products are grown and processed (Organic Trade Association OTA, 2007), interest in consuming organic products may relate to food safety concerns where organic products may be a partial answer to recent food scares associated with production and handling (e.g., BSE, dioxins, Salmonella, etc.). Food

safety issues have driven consumers to search for safer foods whose qualities and attributes are guaranteed.



The success with organic foods depends on consumer acceptance and use. Potential consumers may not even be aware of organic foods or may have the wrong perception even when aware. More knowledge could lead to increased use of organics due to the link between awareness and purchases. Briz and Ward (2009) argue that while awareness is based on consciousness, consumption requires an explicit buying commitment that should be influenced by price and appropriate measure(s) of the organic quality. These may be important attributes to consider increasing organic food consumption.

Table 1 presents the percentage of respondents and their reasons for consuming or not consuming organic products. The main four reasons advanced for consuming organic products in the Transkei are (i) they are healthy and nutritious (89.4% of the consumers); (ii) they have a better appearance and taste (77.3% of the consumers; (iii) they are affordable (68.2% of the consumers); and (iv) they are safe to consume(56.1% of consumers) see Table 1 below.. In the Ciskei , consumers noted that the four main

reasons for consuming organic products were that (i) They are healthy and nutritious (83.1% of consumers); (ii) They are good for the management of illness (35.4% of consumers); (iii) They have a better appearance and taste (30.8% of the consumers) and (iv) they are safe to consume (27.7% of the consumers) and because they saw them advertised on television or radio (27.7% of consumers) see Table 1 below.

**Table 1: Reasons for consuming or not consuming organic products**

<b>Reasons for consuming organic products</b>	<b>Transkei %</b>	<b>Ciskei %</b>	<b>Rural %</b>	<b>Peri-urban %</b>	<b>Urban %</b>
They have better appearance and taste	77.3	30.8	68.2	56.8	47.4
They are healthy/Nutritious	89.4	83.1	86.4	90.9	83.1
They are safe to consume/not contaminated	56.1	27.7	22.7	36.4	52.3
They are affordable	68.2	9.2	54.5	43.2	30.8
I had more income	3	1.5	-	2.3	3.1
They are more accessible to the market	15.2	9.2	4.5	18.2	10.8
They are good for the management of illness	22.7	35.4	27.3	36.4	24.6
They are environmentally friendly	16.7	13.8	-	6.8	26.2
There are more products from the local region	6.1	7.7	9.1	2.3	9.2
There is more trust to the origin/production	9.1	15.4	-	13.6	15.4
Because friends are doing so	7.6	16.9	9.1	9.1	15.4
Because saw it advertised on TV or heard on radio	7.7	27.7	9.5	15.9	21.5
<b>Reasons for NOT consuming organic products</b>	<b>Transkei %</b>	<b>Ciskei %</b>	<b>Rural %</b>	<b>Peri-urban %</b>	<b>Urban %</b>
They are not tasty	20	-	10	-	-
They are not healthy/nutritious	-	-	-	-	-
They are unsafe	-	-	-	-	-
They are expensive	60	54.2	20	62.5	81.8
They are not readily available	60	70.8	80	62.5	63.6

Similar reasons were advanced among rural, peri-urban and urban consumers (see Table 1). This is an indication of a convergence on the consumers' knowledge and awareness about organics. Similarly there was a convergence among consumers across the

Transkei, Ciskei, rural, peri-urban and urban consumers on the reasons for not consuming organic products. The two main reasons advanced is that organic products are expensive according to 60% of the consumers in the Transkei, 54.2% of consumers in the Ciskei, 62.5% of peri-urban consumers and 81.8% of urban consumers (see Table 1). The second reason advanced is that organic products are not readily available according to 60% of the consumers in the Transkei, 70.8% of the consumers in the Ciskei, 80% of rural consumers, 62.5% of peri-urban consumers and 63.6% of urban consumers (see Table 1)

## **7. Factors Influencing Organic Food Products Purchasing**

The price and subsequently the affordability of organic products were ranked as the most important consideration among all consumers interviewed in the Eastern Cape (Table 2). There is a general perception among consumers that organic products are expensive and unaffordable. In the Transkei, the price was subsequently followed by health and nutritional value (ranked 2), Quality (ranked 3) and Packaging/size (ranked 3). In the Ciskei, the price was followed by the quality of organic products (ranked 2), health and nutrition (ranked 3) and certification (ranked 4) (see Table 2). Table 2 further shows that rural consumers ranked price as the most important consideration in buying organic products. Price was followed by the quality of organic products (ranked 2), health and nutritional value (ranked 3) and packaging/size (ranked 4). For peri-urban consumers, prices was also considered the most important factors in buying organic products followed by the quality of the organic products (ranked 2), packaging/size (ranked 3), health and nutrition (ranked 4). Among the urban consumers price again was the leading factor followed by health and nutrition (ranked 2), quality of organic products (ranked 3) and availability of organic products (ranked 4) (Table 2).

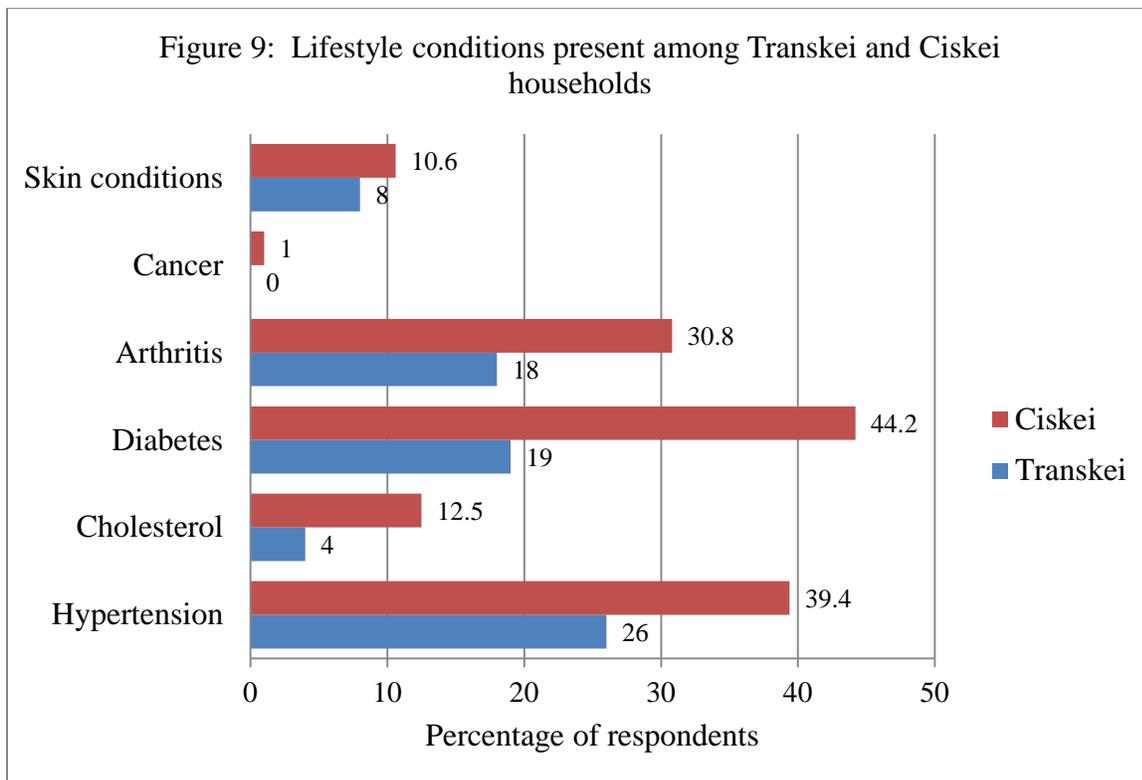
**Table 2: Consumers ranking for factors considered in buying organic products**

<b>Factors</b>	<b>Transkei</b>	<b>Ciskei</b>	<b>Rural</b>	<b>Peri-urban</b>	<b>Urban</b>
Price/affordability	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
Quality	<b>3</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>
Packaging (size)	<b>3</b>	7	<b>4</b>	<b>3</b>	7
Information	7	6	6	6	5
Availability	5	5	5	8	<b>4</b>
Health/nutrition value	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>
Certification	7	<b>4</b>	6	9	6
Environment	6	7	8	5	7
Support for local Farmers	7	7	8	6	7

These results in Table 2 shows a similar trend among all the surveyed consumers in the ranking of price, quality, health and nutrition values, packaging/size and availability of organic products as key motivating factors in the purchase of organic products. Interestingly, the support for local farmers was not a major consideration among all consumers as was environmental considerations. This analysis implies that organic food products should be quite popular with consumers given that some of the reasons most people consume them are also some of the key considerations when purchasing food products in general. Noteworthy however is that price/affordability is the most important consideration when shopping hence organic food products need to be perceived as affordable in order to increase consumption by consumers.

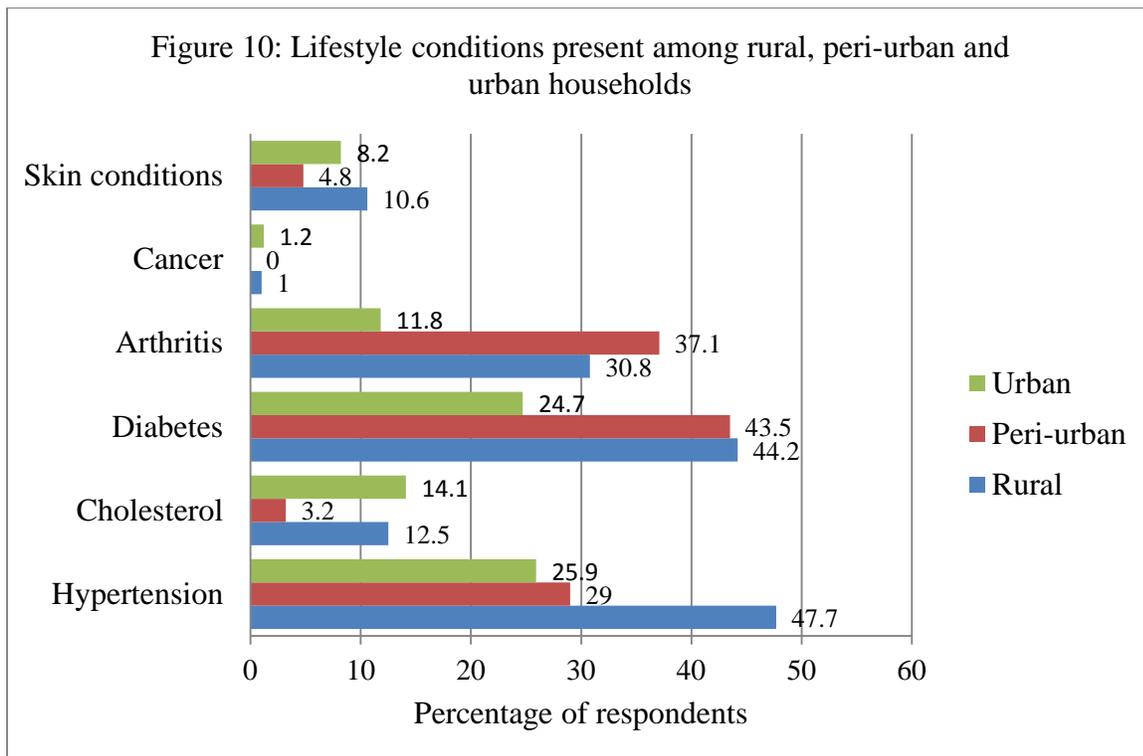
## 8. Health and lifestyle conditions of consumers in the Eastern Cape

The health and lifestyle conditions identified among households in the Eastern Cape were hypertension/High blood pressure, cholesterol, diabetes, arthritis, cancer and skin conditions. Health benefits have been reported as a main motive for purchasing organic food (Yiridoe et al., 2005). As consumers become more aware of food safety, nutrition and sustainability, consumer health takes centre stage. Health is the one aspect consumers are least willing to compromise. Figure 9 shows the lifestyle conditions that are present in the household among the Transkei and the Ciskei consumers.



In the Transkei, the three lifestyle conditions identified among households are hypertension according to 26.4% of the consumers, diabetes among 19% of the consumers and arthritis among 18% of the consumers (Figure 9). Among the Ciskei respondents, the three main lifestyle conditions identified by the respondents were diabetes among 44.2% of the consumers, hypertension among 39.4% consumers and

arthritis among 30.8% of the consumers (Figure 9). There barely was any cancer identified among households in the Transkei and the Ciskei. A further analysis among rural, peri-urban and urban consumers shows that 47.7% of the consumers identified hypertension among their households followed by diabetes identified by 44.2% of the consumers and thirdly arthritis among 30.8% of the consumers (Figure 9). In the peri-urban area, the main identified lifestyle condition was diabetes among 43.5% of the consumers, arthritis among 37.1% of the consumers and hypertension among 29% of the consumers. In the urban areas, hypertension, diabetes and cholesterol were recorded among 25.9%, 24.7% and 14.4% of the consumers respectively. Cancer was also barely existent among consumers in the rural, peri-urban and urban consumers (Figure 10).



Lifestyle conditions that households considered important were hypertension, diabetes and cholesterol for both Transkei and Ciskei consumers. This was also the case in the rural areas. Whereas in severe cases, medical attention is required to treat these lifestyle conditions, health and lifestyle choices are important for their management.

## 9. Traditional food taboos in the Eastern Cape.

Traditional food taboos were not a common occurrence in the study area with less than 5% of the consumers across the various study sites identifying some of the traditional food taboos. On a comparative basis many food taboos seem to make no sense at all, as to what may be declared unfit by one group may be perfectly acceptable to another (Koehler & Leonhaeuser, 2008). On the other hand, food taboos have a long history and one ought to expect a sound explanation for the existence (and persistence) of certain dietary customs in a given culture. Yet, this is a highly debated view and no single theory may explain why people employ special food taboos (Mintz & Du Bois, 2002). Traditional food taboos are a hindrance to choice variation and lifestyle choices available to consumers who subscribe to these taboos. Traditional Food taboos identified in the Eastern Cape during the study were:

- *Ntsangu-Ntsangu* is a weed found in the gardens which looks more like *dagga* ("*ntsangu*" in xhosa) it is not for human consumption as it is believed that if you eat it you will get mad.
- *Velemampondweni* is another wild plant found in gardens which is believed to have originated from the Pondoland hence the name, it also believed to bring madness to the family when consumed.
- *Dungamzi* is a bad luck plant that no one is allowed to bring it to the house and also not for consumption as it brings a bad omen to the household
- *Mpungempu* similar to *Velempondweni* but it's a taboo mainly in the Transkei area.
- *Ntebe* and *Gcamnge* are types of wild weed which are not be eaten and also associated with madness when consumed.
- *Vumbangweis* a plant notfor human consumption but used for dandruff treatment in some areas of Pondoland.
- Young girls and women are prohibited from consuming fresh milk from the Kraal. This refers to animal milk (cow, goat and sheep) especially in rural areas where milk comes from the kraal.

- Eggs should not be consumed by girls in puberty and pregnant women. In the *Xhosa* culture women and young girls were not allowed to eat them in the olden days and some households still practise this today as it is associated with fertility, child birth and enhanced sexual activity.

Food taboos vary among different societies and individuals. Traditional views about food are liable to change under the influence of neighbouring communities, travel and education. Many taboos concern the consumption of protein-rich animal foods, often by those groups of the community most in need of protein. A common taboo in Africa against the consumption of eggs is rapidly disappearing. This taboo usually applies to females, who are said to become sterile if they eat eggs. The psychological connection between human fertility and the egg is obvious. In other places the custom applies to children, perhaps to discourage them from stealing the eggs of setting hens, which would endanger the survival of poultry.

Buruiana (2003) argues that food taboos, whether scientifically correct or not, are often meant to protect the human individual and the observation, for example, that certain allergies and depression are associated with each other could have led to declaring food items taboo that were identified as causal agents for the allergies. Moreover, any food taboo, acknowledged by a particular group of people as part of its ways, aids in the cohesion of this group, helps that particular group maintain its identity in the face of others, and therefore creates a feeling of "belonging" (Buruiana 2003).

## **10. Factors affecting the consumer awareness of organic products**

The results of the logistic regression that estimates consumer awareness of organic products are presented in Table 3 below. The results of the omnibus test of model coefficients were highly significant with  $P < 0.001$  with a chi-square value of 49.137. The Hosmer and Lemeshow test also supports the model as being worthwhile. Pallant (2007) argues that this test is the most reliable test for goodness of fit in SPSS. The chi-square value for the Hosmer and Lemeshow test is 7.542 with a significance level of 0.479. This value is greater than 0.05 indicating support for the model. The model as a whole explained between 30.5 percent (Cox and Snell R square) and 41 percent (Nagelkerke R square) of the variability in the consumer's awareness status.

The accuracy of classification was estimated at 74.8 percent with the sensitivity of the model showing that 64.9 percent of the consumers who are aware of organic products being correctly classified while the specificity of the model is 82.1 percent (indicating that the consumers who are not aware of organic products have been correctly classified). The positive predictive value indicates that of the consumers predicted to be aware of organic products, the model accurately picked 72.6 percent (Peat, 2001; Wright, 1995). According to Table 3, the major factors influencing consumer awareness of organic products are: gender, education, employment, location, person responsible for shopping and the price perception.

Gender was statistically significant at 10 percent and negatively correlated to consumer awareness. These results imply that male were more likely to be aware about organic products than female. This can be attributed to access of information by males compared to females. Briz and Ward (2009) also found that males showed a slightly higher level of awareness than females. Education was positively correlated to consumer awareness and statistically significant at 1 percent level of probability. This results support previous findings that reported that consumers with higher level of education were more likely to be aware about organic products than those with low levels of education (Gracia and Magistris, 2007).

**Table 3: Estimation of binary logistic regression for consumer awareness of organic products, Eastern Cape, 2011**

<i>Variables</i>	<i>Parameter estimate</i>	<i>Std Error</i>	<i>Wald statistic</i>	<i>P-value</i>	<i>Exp(B)</i>
Age(1)	-.326	.795	.168	.682	.722
Age(2)	-.336	.800	.176	.675	.715
Age(3)	.183	.882	.043	.835	1.201
Gender(1)	-.992	.524	3.587	*.058	.371
Education(1)	2.537	.847	8.976	***.003	12.643
Education(2)	3.726	1.171	10.125	***.001	41.495
Household size	-.055	.100	.298	.585	.947
Children(1)	.913	.632	2.082	.149	2.491
Income(1)	-.327	.754	.189	.664	.721
Income(2)	-.799	.864	.854	.355	.450
Income(3)	-1.062	1.001	1.126	.289	.346
Employment(1)	-1.358	.825	2.711	*.100	.257
Location(1)	-.054	.720	.006	.940	.947
Location(2)	-2.665	1.118	5.685	** .017	.070
Distance	-.067	.090	.549	.459	.936
Person shopping(1)	-1.478	.731	4.089	** .043	.228
Person shopping(2)	.341	.606	.316	.574	1.406
Consumption(1)	-.340	.869	.153	.695	.712
Consumption(2)	-.502	.752	.445	.505	.606
Perception(1)	-.064	.750	.007	.931	.938
Perception(2)	1.385	.781	3.141	*.076	3.994
Trust(1)	-.599	.544	1.214	.271	.549
Constant	1.275	1.653	.595	.441	3.579
Observations:	<i>N</i> = 135				
Correct prediction	74.8	percent			
Cox & Snell R square	0.305				
Nagelkerker R square	0.410				
Hosmer&Lemeshow test					
Chi-square	7.542				
Significance	0.479				

\*\*\*, \*\*, \* statistically significant at 1 percent, 5 percent and 10 percent respectively

Briz and Ward (2009) revealed the profound importance of education in the organic food industry. They noted that education and awareness of organic foods showed a close linear relationship where the probabilities almost double between the lowest and highest levels of education. While the purchasing power of lower education level consumers may be limited, the potential payoff from promoting organic foods to the lower educated groups may produce marginal gains incrementally since their percentages are quite low. Employment was statistically significant at 10 percent level of probability and was negatively correlated to consumer awareness. This result is unexpected and may be explained by the fact that consumers with no employment would most likely use traditional methods of production (no chemicals applied) due to the prohibitive costs of chemical inputs and other pesticides. In this study it was established that most of the consumers who used traditional methods of production and did not use chemical and other pesticides but rather animal manure referred to this as their understanding of organic methods of production. These consumers were thus more likely to be aware of organic products as those products produced using these traditional methods.

The location of the consumer is significant at 5 percent level of probability and positively correlated to organic awareness. Rural consumers were less likely to be aware about organic products than urban consumers. This can be attributed to the fact that organic products currently target a niche market which is the upper middle class and the modes of marketing the products through mass media are more accessible to urban consumers than rural consumers. However any government or private sector programs to inform the public about organics should probably be national in scope and contrasted to focus on rural, peri-urban and urban consumers, if the organic industry is to grow and be sustainable.

The person responsible for shopping was statistically significant at 5 percent level of probability and positively correlated to organic awareness. Consumers who shopped jointly with other members of the household were more likely to be aware of organic products than those who shopped alone. This can be attributed to discussions and sharing of information among shoppers on the different products available in the market. It also increases the chance of a purchase decision being made. The consumer's perception of price was statistically significant at 5 percent. Consumers who perceived the price of organic products as high were less likely to be

aware of organic products than those who did not think the price of organic was high. This can be attributed to consumer's reluctance to consume organics due to perceived high prices and would shy away from organic products.

## **11. Determinants of organic products consumption in the Eastern Cape**

The results of the discriminant analysis are presented in Table 4 below. The estimated LDF coefficients show the relative importance of the independent variables because they are standardized and unit-free (Harris, 1985). The first LDF1 (Table 4) identifies price perception and age of the consumer as the most important variables distinguishing the consumers who have never consumed organics against those that have consumed organics. This is probably because if the consumer perceives the price of organics as high they are less likely to consume organics. The contrary is true if the consumer perceives the price of organics as reasonable. Price perceptions have generally been considered as an important factor in consumers' willingness to pay for organics (Canavari, Nocella and Scarpa, 2003; Laroche, Toffoli, Kim and Muller, 1996). Some researchers on the other hand have found that organic food consumers are less likely to consider price as important (Williams and Hammitt, 2000).

Cobo and Gonzales (2001) found that organic consumers were most likely between 25 and 54 years old. Thompson (1998) indicated that the highest percentage of consumers buying organics were aged 18 – 29 and 40 - 49 years and the least likely were those over 60 years. This indicate that age is considered important and understanding the age dynamics and consumption of organics will go a long way in influencing the target market and marketing approach to drive the demand of organics. The second LDF 2 identified the person responsible for shopping and the location of the consumer as discriminating factors between those who have never consumed organics and those that consider consuming organics. The person responsible for shopping is most likely to make the decision on the composition of the food basket and the location of the consumer will determine accessibility and trends within a given locality and will influence the consumer's decisions.

**Table 4: Standardized discriminant functions distinguishing between consumers in the Eastern Cape, 2011**

Discriminating variable	Standardised Coefficient Estimates		Group Means			Univariate F-Value
	Function 1 LDF1	Function 2 LDF2	Never consumed	Considered consuming	Have consumed	
Age	0.535	0.347	2.944	2.849	2.298	***5.138
Gender	0.156	-0.366	1.667	1.485	1.583	0.854
Education	-0.086	0.209	1.944	2.030	2.190	1.035
Household size	0.137	0.048	4.500	4.939	4.869	0.163
Children	-0.232	-0.223	0.611	0.606	0.738	1.252
Income	0.456	-0.064	2.556	2.606	2.583	0.013
Occupation	0.062	-0.016	0.556	0.576	0.595	0.055
Location	0.241	0.416	1.722	1.697	1.357	***8.545
Distance	-0.007	0.311	6.611	7.667	6.571	0.929
Person shopping	-0.188	0.809	1.111	2.030	1.952	***9.409
Awareness	-0.487	0.063	0.056	0.242	0.310	*2.561
Price perception	-0.671	0.042	1.667	1.939	2.333	***8.176
Trust	0.345	-0.063	1.611	1.515	1.345	*2.985
Wilk's lambda	*** 0.583	0.876				
Canonical correlation	0.579	0.352				
<u>Group centroids:</u>						
Never consumed	1.383	-0.602				
Considered consuming	0.551	0.585				
Consumed	-0.513	-0.101				
<u>Classifications:</u>						
Never consumed		83.3	percent			
Considered consuming		45.5	percent			
Have consumed		71.4	percent			

\*\*\*, \*\*, \* denotes statistical significance at 1percent 5percent and 10percent level of probability

The frequency distributions of the estimated discriminant scores for the two linear discriminant functions were all approximately normally distributed, suggesting that the significance tests are reliable and can be accepted with reasonable confidence. The Wilk's lambda<sup>1</sup> is a measure of the overall statistical significance of the LDFs (Manley, 1986) and is statistically significant at the 1 percent level of probability for the LDF 1. This implies that the group means for the independent variables are different on the discriminating function and that the differences in the mean discriminant score is greater than can be attributed to sampling error. The Wilk's lambda is statistically significant by the F-test for the age of the consumer, location, person responsible for shopping, consumer awareness of organics, price perception and label trust.

<sup>1</sup>Wilks  $\lambda_1 = [1 / (1 + \beta_1)]$  and Wilks  $\lambda_2 = [1 / (1 + \beta_1)(1 + \beta_2)]$  where  $\beta_i$  is the eigen value

The LDF1 accounts for 78.1 percent of the variation between the consumer groups. The group centroids are quite different for the three groups for each LDF. The results show reasonable explanatory power, with the percent of overall correct predictions estimated at 66.7 percent. The percentage of correct classification for each stratum is 83.3 percent for those who have never consumed organic, 45.5 percent for those who have considered consuming organics and 71.4 percent for those that have consumed organics (Table 4).

According to the results in Table 4 the age of the consumer was statistically significant at 1 percent level of probability and positively correlated to consumption. This result indicates that older consumers were more likely to consume organics compared to younger consumers. This may be attributed to the fact that aging populations are more concerned with their health and hence more likely to purchase organics (Padel and Foster, 2005) as organic consumers are mainly those that are health conscious (Baker, Thompson and Engelken, 2004). The results support findings by Tsakiridou, Boutsouki, Zotos & Mattas (2008) who indicated that older consumers were more health conscious and willing to pay an extra price for organics. Clearly for the organic food industry, gains are needed among all age groups but particular efforts among the youngest generation may be incrementally more beneficial since their awareness levels are lower.

The location of consumer was statistically significant at 1 percent level of probability and was positively correlated to the consumption of organic products. The results show that consumers residing in the Ciskei were more likely to consume or consider consuming organics compared to consumers residing in the Transkei. The Ciskei consumer was more readily exposed to organic products compared to the Transkei consumer due to the cosmopolitan nature of the Ciskei compared to the Transkei. While majority of the Transkei is classified as rural, the Ciskei include the economic and industrial hub of the province harbouring the major towns, airports and industrial zones. The provincial headquarters are also located in the Ciskei. According to Briz & Ward (2009), predominantly rural areas are slightly less likely to be exposed to organic foods. The major organic retail markets are also based in the Ciskei as are the organic farmer's markets example Lavender Blue in East London which is popular for the selling of organic products.

The person responsible for household food shopping was statistically significant at 1 percent level of probability and negatively correlated with the consumption of organic food. The consumer who was personally responsible for the household food shopping was more likely to consume organics than if this was a joint responsibility. This could be attributed to personal consciousness and decision making with less external influence. Consumption of organics is more of an individual choice than a choice made jointly or after consultation.

Consumer awareness of organic products was statistically significant and negatively correlated to consumption of organic products. This finding supports several studies that have indicated that while consumer awareness of organic food is the first step in developing demand for organic products, awareness does not necessarily equate consumption. Briz and Ward (2009) argue that while success with organic foods depends on consumer acceptance and use, potential consumers may not even be aware of organic foods or may have the wrong perception even when aware.

According to Rezai, Mohamed and Shamsudin (2011) more knowledge could lead to increased use of organics as suggested with the link between awareness and purchases. Yet complete knowledge does not assure continued increases in demand since potential consumers may discover attributes that differ little from non-organic alternatives. To the extent that demand for organics is based on credence attributes and consumer emotions, the linkage between awareness and consumption may be nonlinear and for some level of awareness possibly not even positive (Jensen, 2008). That implies that the learning curve about organics may not always lead to increasing demand.

The price perception was statistically significant at 1 percent level of probability and negatively correlated to consumer awareness of organics. Whereas consumers generally conceded that the prices of organic were somewhat high to really high, in the Eastern Cape, Aryal, Chaudhary, Pandit, and Sharma (2009) argues that production and marketing strategies of organic products are determined considering the willingness to pay a premium price. Dipeolu, Philip, Aiyelaagbe, Akinbode and Adedokun (2009) and Salleh, Ali, Harun, Jalil and Shaharudin (2010) also confirmed findings that consumers are willing to pay more for organic foods or what could also be referred to as the ethical premium. This niche consumer is willing to pay an extra price for

health and safety, animal welfare as well as the beneficial effect to the environment. Studies where health and environmental benefits were considered as the main factors to consume organics include among others (Hill and Lynchehaun, 2002; Makatouni (2002) and McEachern and McClean (2002). These studies noted that consumers were willing to pay more for health, safety and environmental consciousness.

There was a positive and statistically significant relationship between consumers who trust organic food labels and the consumption of organic foods. Consumers who fully trusted organic labels were more likely to consume organics than those who were weary of organic food labels. Trust was statistically significant at 1 percent level of probability. This result supports findings by Krystallis and Chrysosoidis (2005) and Raab and Grobe (2005) who found that trust for regulatory authorities and brand labeling positively impacted on the purchase of organic foods. Trustworthy eco-labels provide consumers with valuable information on environmentally friendly products and thus promote green consumerism (Boström 2006). Boström and Klintman (2008) argue that low governmental involvement increases confidence and trust for eco-ecolabels. In this study majority of the consumers responded that they would prefer verification and labelling of organic products to be done by an independent company. This suggests that government should just provide the basic legal framework for eco-labelling and leave the rest to independent. Nilsson, Tunçer, and Thidell (2004) state that independence of the verification and certification of organic products impacts positively on the consumer's confidence of the product and is an indication of the trust of the organic label.

## **12. Conclusion**

This paper has established the growing importance of organic products in the food system of the Eastern Cape Province which warrants a systematic investigation into consumer preferences and buying behaviour. Factors influencing choice revolve around issues that are amenable to manipulation by advocacy and policy, including such questions as the consideration of organic products as healthier and more nutritious with better appearance and taste, as well as being more affordable and safe. There is a strong role for the private sector in promoting the consumption of organic products whose demand outlook is quite bright. This is particularly crucial in view of the finding that consumers respond to food labelling quite significantly which throws the challenge to agro-business management for more innovative packaging and displays to enhance the appeal

of organic products. It is also important that government finds ways of integrating organic foods issues into the on-going agricultural restructuring process by providing the basic legal framework for eco-labelling, among other actions to create an enabling environment for private sector operations.

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