

Consumer Attitudes and Purchase Behaviour towards Organic Fruits and Vegetables: A Study in Kodagu District of Karnataka

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Abstract: *Today's enlightened, health conscious consumers are not only concerned about their quality of life but also all other forms of life and of the environment. There is a growing trend among consumers in demanding food that is "organic" that is, food which is grown or cultivated without the use of chemical fertilizers or pesticides. The present study focused on the awareness and attitude of consumers towards organic fruits and vegetables in Kodagu District of Karnataka. It also sought to identify factors which influence purchase intentions and also expectations with regard to organic fruits and vegetables. The data was collected from 100 respondents in Kodagu using a questionnaire. Results indicate that all respondents are aware of organic fruits and vegetables and do consume them. Their purchase intention is influenced by the beneficial health aspects as also environmental concerns. Consumers expect growers or retailers to label organic produce to differentiate in the marketplace. The study also found that there are no significant gender based differences with respect to attitude and purchase of organic fruits and vegetables.*

Keywords: *Organic fruits and vegetables, Consumer awareness, Consumer Attitude, Consumer Expectations, Kodagu.*

1. INTRODUCTION:

Agriculture is called upon to feed a growing population thereby putting undue pressure to enhance yield through intensive practices, one among them being the use of chemical fertilizers and pesticides. The use of such chemicals have a marked negative influence on various systems- such as decreasing immunity and making the humans susceptible to many diseases including the dreaded cancer and has hence reduced the quality of life; environment degradation due to chemical residues in soil, water and air; reducing soil quality, contaminating rivers, lakes and ground water and making the ecosystem unfit for all forms of life. One must understand the irony that the food produced that should actually nourish and sustain lives is in reality eventually killing them. Indeed a great threat is engulfing our planet. This has motivated agricultural scientists, policy makers, green activists and the society in general to look for an alternative system of farming to restore our environment and soil health and also alleviate consumer concerns of nutrition, health, safety and quality of life.

Organic farming is a holistic system designed to optimize productivity and sustain the diverse communities within the ecosystem such as soil organisms, plants, animals, aquatic life and human beings. Many a time organic farming is understood by *what it is not*. It is a method of crop and livestock production *without* the use of chemical fertilizers, pesticides, growth hormones and genetically modified organisms (H. Martin, 2009). Let's understand organic farming by *what it is*. Organic farming can be defined as the proactive, ecological management strategies that maintain and enhance soil fertility, prevent soil erosion, promote and enhance biological diversity and minimize risks to human and animal health and natural resources (Danielle Treadwell et.al.2019). Hence Organic farming methods combine scientific knowledge of ecology and some modern technology with traditional farming practices based on naturally occurring biological processes.

Today consumers are becoming more aware of the harmful effects of the conventional agricultural practices and are more concerned about the quality of the food they eat. They are more vocal in demanding food products that are safe for them, the society and the environment. Research suggests that consumers have become more concerned about the nutrition, health and quality of food they eat (Gil, Gracia, & Sanchez, 2000). The issue of safety and environmental concerns has made production and consumption of organic products a priority on the agenda of policy makers (Owusu & Anifori, 2012). Hence the outlook towards agricultural practices has witnessed a quantum change and there is a growing potential for organic food market and hence it becomes imperative to understand the attitudes and perceptions of the consumers towards organically grown products. Also on the contrary, to increase the consumption of organic products, communication strategies need to be devised to convey the benefits of organic products to the consumers as also the farming community.

2. REVIEW OF LITERATURE:

Consumer Awareness and Knowledge

Consumers' purchase behavior largely depends on the level of awareness and the knowledge and most important how they perceive organic products based on this knowledge. Some perceive it as a healthy option, for some it may be environmentally friendly option; some may be still skeptical regarding its authenticity and so on and so forth. Nevertheless research findings on the benefits of organic products over conventionally grown products must be communicated in an effective manner to influence purchase intentions of consumers. If consumers' demand for organic products increases, then producers have to reorient all their agricultural practices and this would go a long way in sustaining all forms of ecosystems.

Von Alvsleben (1997) opined that knowledge about the organic food is important because this helps consumers recognize the distinctive characteristics and benefits of organic food when compared with conventional food and this leads to favourable orientation towards organic food. Ritson & Oughton, 2007 highlighted among other factors, that consumers' level of knowledge about organic foods is considered a major barrier to the development of the organic food market; people do not buy organic vegetables unless they are educated about its benefits. A similar observation was made by Vukasovic (2013) that lack of awareness and low knowledge about organic food prevents consumers from buying them. Stobbelaar et al. (2007) also found that higher the education level, the more the knowledge about organic food. Therefore, consumer knowledge and awareness of organically produced foods are important in their purchase decisions. The advertisement of organic food products and better taste would influence the purchase of organic food products according to Chandrashekar (2014).

Consumer Attitudes towards organic fruits and vegetables

Attitude influences greatly on the intention of consuming organic fruits and vegetables according to Saba & Messina (2003), who opined that consumers agreed that organic fruits and vegetables were healthy, environmentally friendly, and more tasty and nutritious than conventionally grown foods. In their study on attitude towards buying organic food and purchase intention, Tarkiainen & Sundqvist (2005) found a positive correlation. According to Stobbelaar et al. (2007) adolescents' attitudes with respect to organic food is influenced by the extent of environmental friendliness, animal welfare and personal health benefits. Aertsens et al. (2009) reported that the outcome of similar studies reveal that beliefs about health, taste and environmental concerns have the strongest influence on attitude of consumers towards the purchase of organic food products.

There is a growing trend among consumers in developing economies with rising per capita incomes to demand for food which has satisfying attributes such as safety, freshness, appearance and texture (Hadi et al., 2010). In a study on purchase behavior of rural consumers in Scotland by Michaelidou and Hassan (2010), it was observed that there was a direct relationship between consumer attitudes and factors such as food safety, ethical lifestyle and price perceptions. According to Owusu and Anifori (2013), a literature survey on consumer studies show that socio-economic attributes such as gender, age, income, education and level of perceptions and awareness of product taste, price, freshness and size can impact consumers' willingness to pay for organic food products. Padiya and Vala (2012) conducted a study in Ahmedabad and concluded that the organic food consumers are less price sensitive, have faith in quality and information provided; they generally seek information from newspapers and at the point of purchase. Maintaining a good health is the main inspiration for purchasing organic food in India as reported by Yadav and Pathak (2016).

Price of Organic Fruits and Vegetables and Purchase Intentions

Price is primarily one of the major factors influencing purchase decisions when consumers make choices with regard to food products according to Matanda et al., 2000 and Maxwell, 2001. Kyriakopoulos & Oude Ophuis, 1997 concluded through their study that the introduction of organic products world over is influenced by the relationship between price premiums of organic products and consumer's willingness to pay. In a study in Ghana by Nouhoheflin et al. (2004), consumers' perception towards chemical-free vegetables and willingness to pay was examined and they discovered a willingness to pay of more than 50% for price premium. Vlahovic *et al.* (2011), in a study in Serbia, analyzed the consumer attitude towards organic food consumption and the outcome put forth showed consumer awareness about the importance of organic food found to be lacking; high price was found to be a limiting factor and fruits and vegetables were the mostly preferred and purchased organic products. Chakrabarti (2010) in his study found that the penetration of organic food in the market was difficult due to high price and limited availability. Ham et al. (2015) and Xie et al. (2015) also highlighted high price and limited availability as the reason for the regular organic consumers to still buy conventional products.

Expectations towards organic fruits and vegetables

Consumer expectations of product quality are not a widely researched topic according to Schleenbecker et al. (2013). Stolz et al. (2009) conducted a study on consumer expectations for product characteristics with regard to organic yogurt, milk and apples and concluded that consumers do have some expectations about organic food. Distinguishing

organic products with a standard packaging strategy and a logo or statement confirming the organic status adds to the value of the products in terms of quality and social benefits, etc. according to Suganya and Aravinth (2014). Identifying consumers' expectations with regard to organic products is therefore of great importance as it influences purchase intentions.

3. PROBLEM STATEMENT:

There are many kinds of organic food products- fruits, vegetables, beverages like coffee and tea, spices etc. Fruits and vegetables are the most preferred organic products in most countries. Organic fruits and vegetables are perceived to be more healthier, grown in environment friendly manner and also more expensive than conventionally grown ones. Kodagu is predominantly agrarian and cow and animal manure is abundantly used, along with chemical fertilizers. But slowly there is a trend towards organic farming- with certified organic coffee plantations. Also people grow their own vegetables and certain fruits suited to the climate and soil mostly using organic manures. There is a prominent presence of local farmers in the weekly markets selling fruits and vegetables which they claim as organic, but with no certified labels. Hence a trend is noticed among the consumers preference towards organic fruits and vegetables. Therefore a study of consumer's attitude and perception towards organic fruits and vegetables, their willingness to pay a premium for such products and their expectations from the producers of such products is attempted in this paper.

4. OBJECTIVES OF THE STUDY:

- To understand the level of awareness about organic fruits and vegetables in Kodagu District.
- To examine the factors influencing the attitudes of consumers towards organic fruits and vegetables in the study area.
- To determine their willingness to pay a premium for organic fruits and vegetables.
- To determine their expectations regarding organic fruits and vegetables
- To understand the influence of gender on the attitude and expectations towards the consumption of organic fruits and vegetables.

Area of the Study

The population covers Kodagu (Coorg) district.

Description of the study area

Kodagu (Coorg) is a tiny picturesque agrarian district nestled in the Western Ghats of Karnataka. Known for being the birthplace of river Cauvery, it is adorned by beautiful coffee plantations, thick forests, lush green paddy fields, waterfalls and serene hill slopes and valleys. Kodagu is a rural region and most of its economy due to the agro-climatic conditions is based on forestry, agriculture and plantations. Coffee, spices such as pepper and cardamom, oranges, bananas, honey and paddy are the main revenue earners. Of late, tourism has become a major contributor to the economy of Kodagu especially eco-tourism. Kodagu is known world over for its coffee and its "brave warriors". According to 2011 population census, Kodagu is home to a population of 5,54,319. With no major industry in the district, agriculture determines the pace and pattern of development.

Sources of Data

The study is based on primary data collection. The data was collected through a structured questionnaire. The survey questionnaire developed for the study had questions representing five different components of the study, namely, demographic profile of consumers, their level of awareness and knowledge of organic fruits and vegetables, attitude towards organic fruits and vegetables, price sensitiveness of consumers and expectations of organic fruits and vegetables. The secondary data was collected with the help of books, internet and journals.

Sampling Design

Convenient sampling was adopted in this study. The sample consisted of 100 respondents.

Hypothesis:

H1: Gender has a significant influence on the opinion of consumers towards the purchase of organic fruits and vegetables.

H2: Gender has a significant influence on the attitude/ perceptions of consumers towards organic fruits and vegetables.

H3: Gender has a significant influence on the expectations of consumers towards organic fruits and vegetables.

Tools for analysis

Statistical tools adopted to assess the data were Simple Percentage analysis, Arithmetic Mean, Standard Deviation and Students t-test to interpret the influence of gender on the attitude and expectations towards the consumption of organic fruits and vegetables and to arrive at a logical conclusion.

Limitations of the Study

- The survey was limited to people residing in Kodagu district only.
- The small sample size might not be substantive enough to represent the whole population.
- The objectivity is limited to the extent of the respondents’ honest opinions.

5. ANALYSIS AND DISCUSSION:

Table 1: Demographic Profile of the respondents (N=100)

	Characteristics	Frequency/ %
	Total	100
Gender	Male	68
	Female	32
Age	18-25	17
	26-35	27
	36-45	31
	45-55	17
	56-65	7
	>65	1
Education	SSLC & Below	16
	PUC	29
	Graduate	33
	Post Graduate	22
Occupation	Student	8
	Agriculture	36
	Employed	30
	Professional	14
	Unemployed	11
	Retired	1
Marital Status	Married	78
	Single	22
Income(Rs)	< 10000	6
	10000-20000	30
	20000-30000	34
	> 30000	30
Place of Residence	Rural	46
	Urban	54

Awareness and Knowledge of organic fruits and vegetables

Consumer awareness was determined by asking the respondents if they had heard about the term ‘organic’ when referring to fruits and vegetables. All the respondents answered in the affirmative i.e., they had heard about it. It was not surprising owing to the fact that Kodagu is an agrarian district and almost every person is familiar with the word ‘organic’.

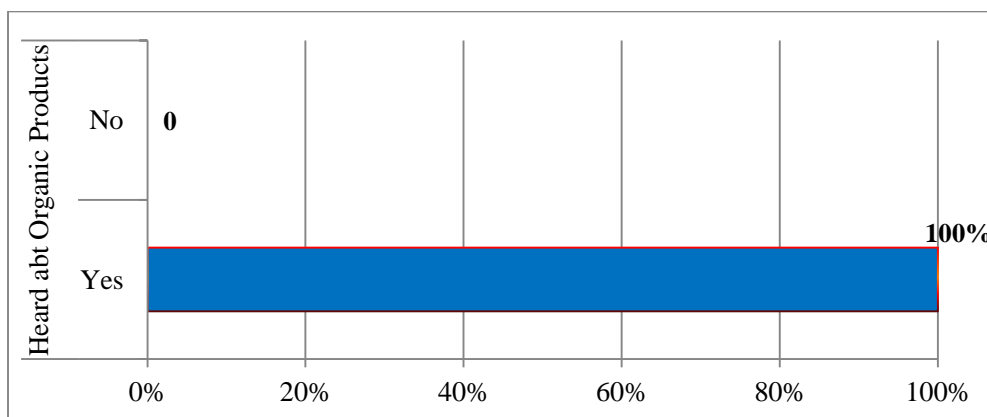


Figure 1: Awareness about Organic Products

The next question was on the source of this knowledge. 84% of the respondents obtained the knowledge through the print and electronic media followed by ‘through friends’ (40%).

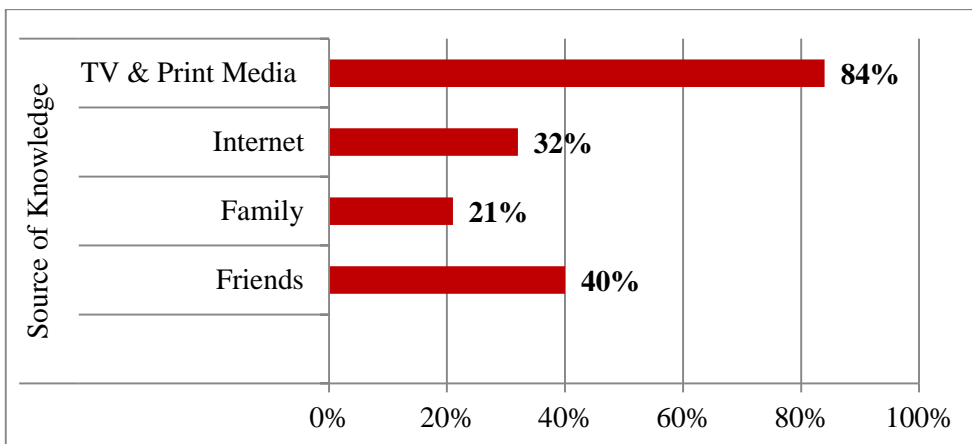


Figure 2: Source of Knowledge

Consumption and Buying Behavior

The first question in this section was on the consumption aspect. The percentage of the sample who consumed organic produce is quite high. 90% of the respondents consumed either organic fruits or organic vegetables or both.

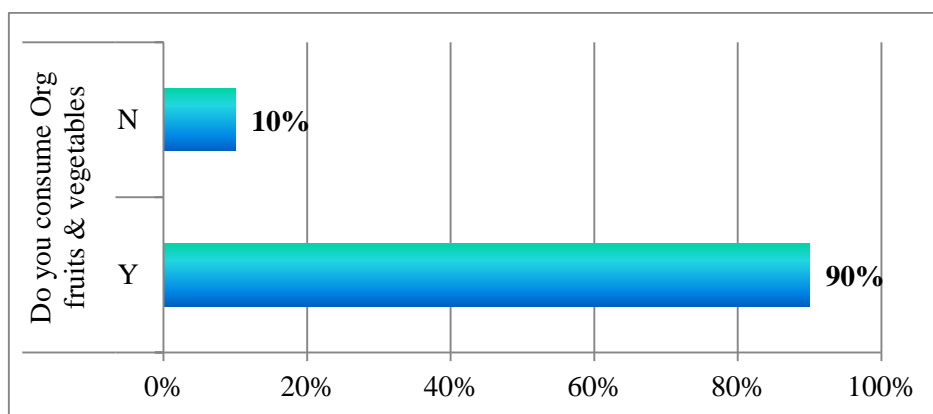


Figure 3: Consumption of Organic fruits & Vegetables

To a question on *Frequency* of consumption of organic fruits, 50% consumed occasionally and 19% never purchased organic fruits. 6% of the sample purchased/ consumed only organic fruits- this probably may be those who grow organic fruits in their farms.

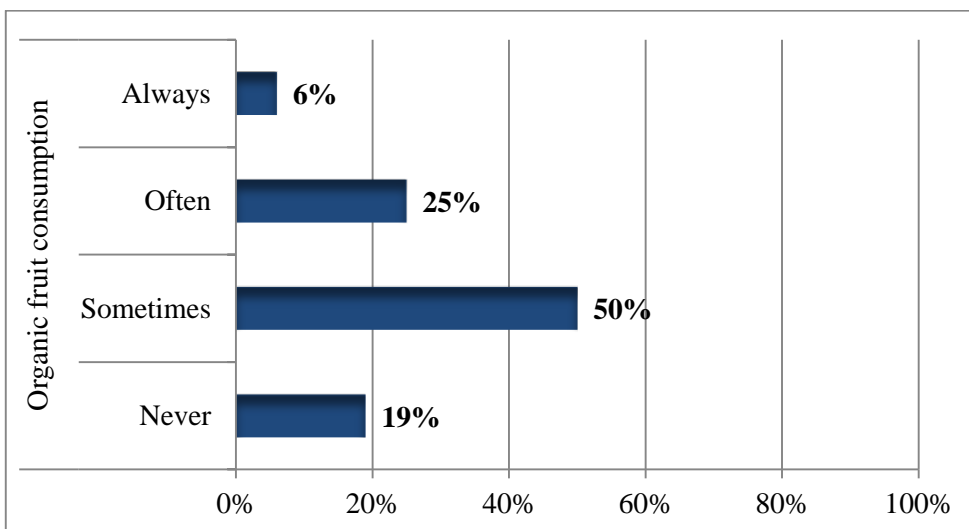


Figure 4: Purchase Frequency of Organic Fruits

With regard to organic vegetables, 51% purchased/ consumed often. This may be due to the easy availability in the weekly markets. 10% of the sample consumed only organic vegetables, most of whom grow them on their farms. 10% of them do not purchase organic vegetables. When compared to organic fruits, it is observed that consumption/ purchase of organic vegetables is more frequent.

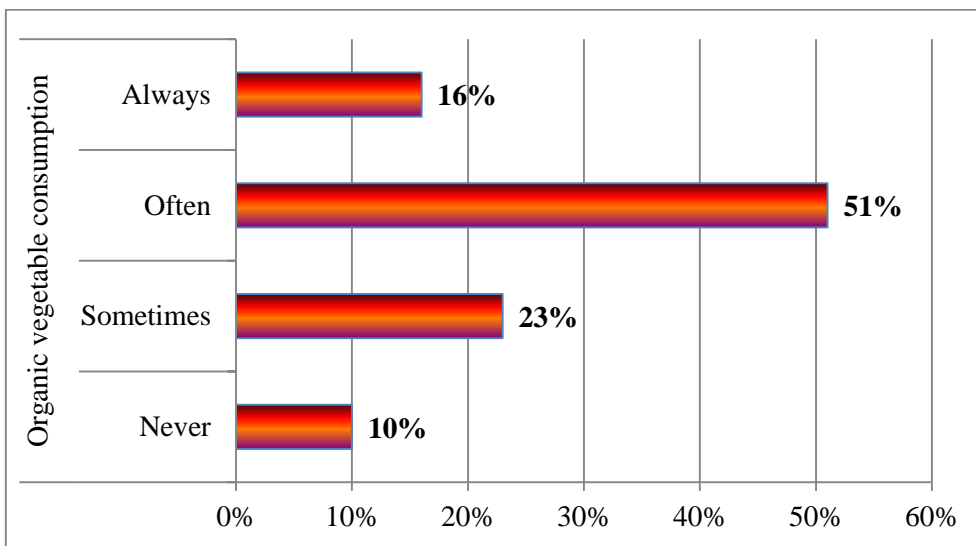


Figure 5: Purchase Frequency of Organic Vegetables

Most of the respondents (74%) purchase organic fruits and vegetables in the market, especially the weekly local markets where the growers bring their organic produce for sale. They have no labels to certify but consumers have faith on their oral claims.

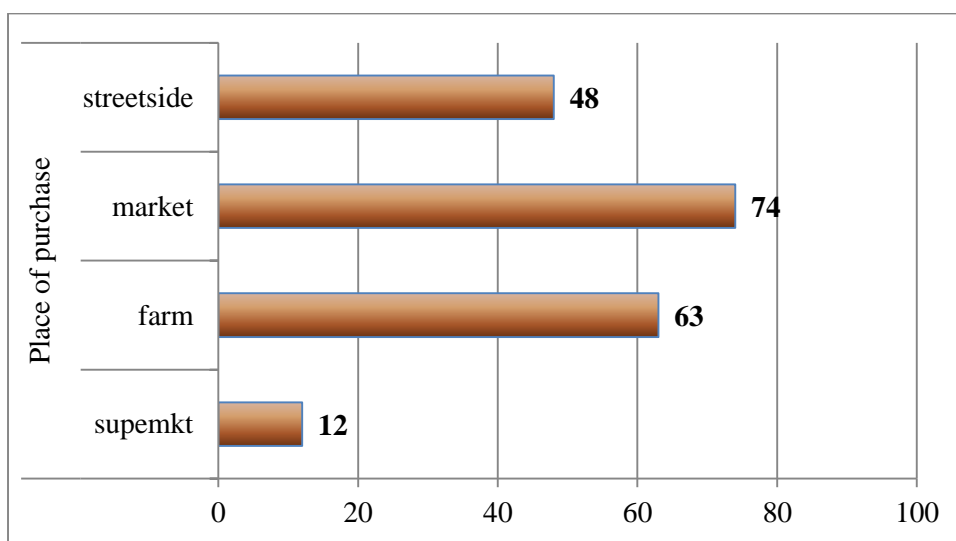


Figure 6: Place of Purchase

To understand the opinion of respondents towards the purchase of organic produces, three questions namely whether it is *good* to buy, *important* to buy and *wise* to buy them were asked. A 5-point Likert-scale was used- 5- for Strongly agree to 1- for Strongly Disagree. For the question on whether it is *good* to buy organic fruits and vegetables, respondents’ mean score was around 4.2- indicating that they agree that it is good to buy. For the question on whether it is *important* to buy organic fruits and vegetables, respondents’ mean score was around 3.6- indicating that their level of agreement is not very high. This implies that organic produce is not a perfect substitute for conventional ones. For the question on whether it is *wise* to buy organic fruits and vegetables, respondents’ mean score was around 3.9- indicating that respondents almost agree that it is a wise decision to switch over to organic.

With respect to opinions gender-wise, in case of *good* and *important* option, male respondents have a slightly more agreement than female respondents; but female respondents’ agreement was a slight higher than male for the *wise* option. Hence it can be inferred that the respondents think it is good, important and wise to buy organic fruits and vegetables.

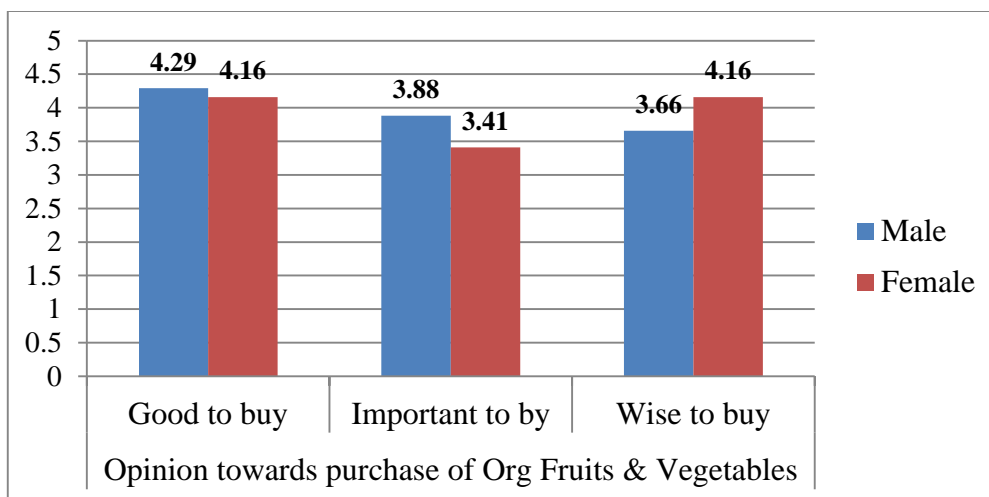


Figure 7: Opinion towards purchase of organic fruits & vegetables

Willingness to pay more for Organic Fruits & Vegetables

Many studies have indicated that price is a deterrent for the purchase of organic products. 57% of the respondents are willing to pay more for organic produce. 50 % of the male respondents are willing to pay more for organic produce while 71.8 % of the female respondents are willing to pay more. This indicates that the women are less price- sensitive.

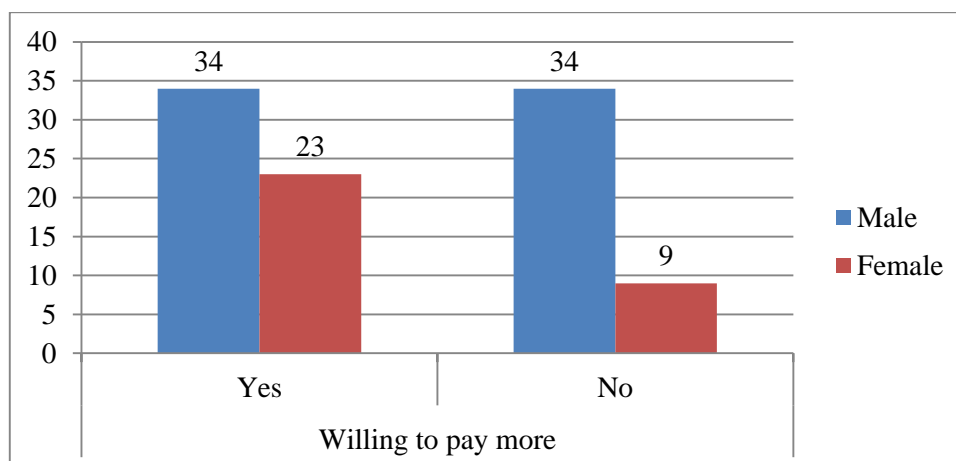


Figure 8: Willingness to pay more for organic fruits & vegetables

Factors influencing attitude towards organic fruits and vegetables in comparison to conventional ones

The consumers’ attitude towards organic products is measured with the help of five point Likert scale, where 5 represents “strongly agree” and 1 represents “strongly disagree”. The table below shows the gender-wise values of mean and standard deviation for 6 statements pertaining to consumers’ attitude towards organic fruits & vegetables. As inferred, in case of both the genders, the mean value of the statement “Organic products are a healthier option” is highest, the consumers preferred organic products because of their healthy and natural ingredients than conventional products. Hence the very reason for using organic product was health benefits. Overall, it can be inferred that respondents hold a more positive opinion towards organic fruits and vegetables when compared to conventionally grown ones. Also the respondents, mostly women do not feel consumption of organic products serves as a status symbol or a matter of prestige. Health and environmental benefits outweigh all other factors. Another noteworthy observation is that the respondents also opined that the high price is justified; this indicates the level of knowledge they possess regarding the costs incurred in growing and maintaining organic farms.

Table 2: Factors influencing Attitude to Organic Fruits & Vegetables (Gender based comparison)

Sl.no	Item	Mean	SD
Male			
1	Healthy Option	4.352	0.707
2	Environment Friendly	3.867	0.944
3	More Positive Opinion	4.088	0.876

4	High Price justified	3.382	1.258
5	Confidence in claims made regarding Organic status	3.514	1.057
6	Status / Prestige symbol	3.25	1.285
Female			
1	Healthy Option	4.156	0.677
2	Environment Friendly	3.968	0.594
3	More Positive Opinion	3.937	0.715
4	High Price justified	3.625	0.751
5	Confidence in claims made regarding Organic status	3.375	0.751
6	Status / Prestige symbol	2.75	0.842

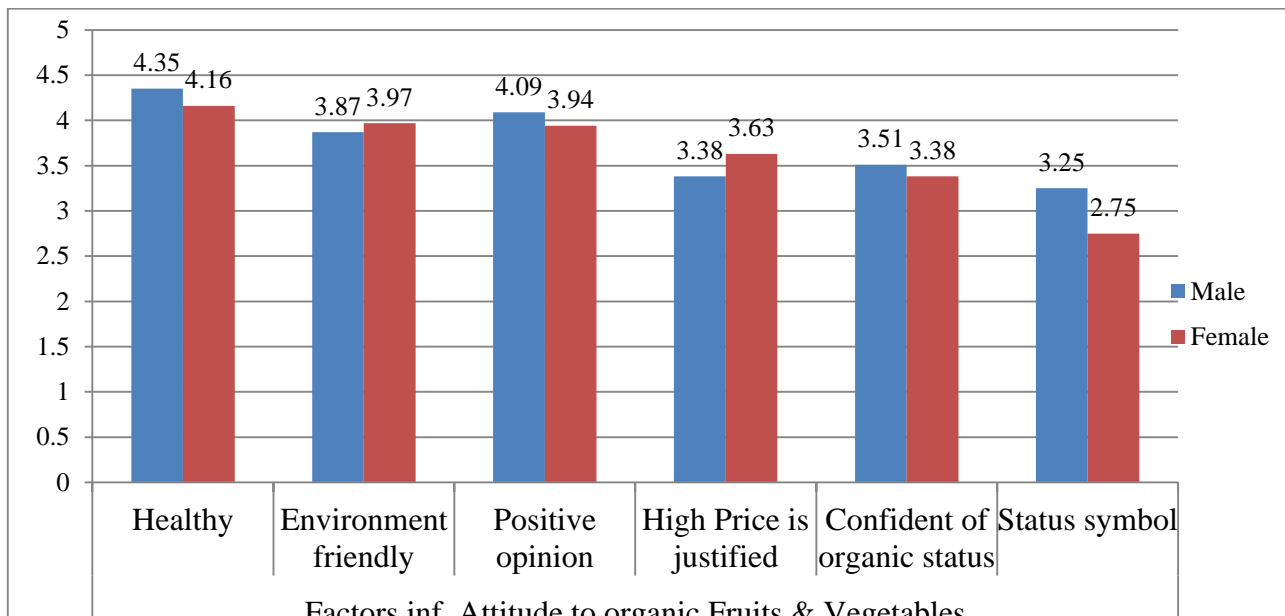


Figure 9: Gender based comparison of Attitude to Organic Fruits & Vegetables

Expectations with regard to organic fruits and vegetables

With respect to the expectations of respondents with regard to organic fruits and vegetables, the combined average of male and female respondents is 4.36 / 5 indicating that organic fruits and vegetables must bear an organic label to allow for easy identification. This expectation is not surprising because most fruits and vegetables in Kodagu are bought and sold fresh in the market and as such most do not bear an organic certified label. They have trust in the claims of local growers of their organic status. Likewise consumers on average (4.32 / 5) indicated that more education is needed to help them differentiate organic and non-organic fruits and vegetables. This is not surprising because even after repeated purchases, unless they are told, consumers may not be able to rightly identify organic products as they do not have distinct distinguishing features. Now as the trend moves towards *everything organic*, more education and awareness is required.

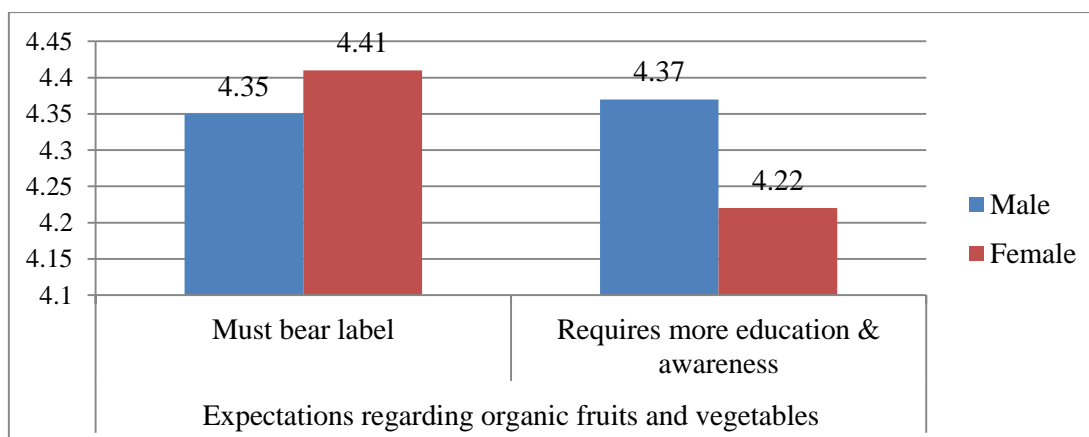


Figure 10: Gender based comparison of Expectations regarding Organic Fruits & Vegetables

6. Results from hypothesis testing:

The hypothesis that gender has no significant influence on the opinion, attitude and expectation factor stated as follows was tested using t test statistic.

H1: Gender has a significant influence on the opinion of consumers towards the purchase of organic fruits and vegetables.

H2: Gender has a significant influence on the attitude/ perceptions of consumers towards organic fruits and vegetables.

H3: Gender has a significant influence on the expectations of consumers towards organic fruits and vegetables.

Table 3: Results of Hypothesis Testing

Description		Mean	Variance	t Stat	P(T<=t) two-tail at 5% level of sig	Sig
Opinion towards purchase of organic fruits & vegetables	Male	3.94	0.102	0.1072	0.9197	Not-significant
	Female	3.91	0.188			
Attitude towards organic fruits & vegetables compared to non-organic ones.	Male	3.74	0.186	0.3902	0.7046	Not-significant
	Female	3.64	0.265			
Expectations from organic producers/sellers	Male	4.36	0.0002	0.47108	0.7197	Not-significant
	Female	4.32	0.0180			

The observed difference between the sample means of male and female respondents w.r.t opinion regarding purchase of organic fruits and vegetables, attitude towards organic fruits and vegetables and expectations from the producers/ marketers of organic fruits and vegetables is not convincing enough to say that the female and male respondents differ significantly. Hence the Null hypothesis cannot be rejected. That is, Gender has no significant influence on Opinion, Attitude and Expectations.

7. SUGGESTIONS:

- Create awareness in the society emphasizing on the quality of life and environment sustenance.
- The government as well as non-governmental organizations should support farmers both financially and structurally to convert to organic farms so that large scale supply is ensured.
- A governmental mechanism for certifying farms growing organic fruits and vegetables to protect consumers from false claims.
- Marketing efforts by the producers and retailers in positioning of organic fruits and vegetables in the minds of consumers.
- Creating distinctive spaces for organic products in supermarkets or retail stores.
- Labeling organic fruits and vegetables.

8. CONCLUSIONS:

Consumers are today an enlightened lot, with a lot of concern on sustaining life of all forms as also the environment and ecology. Any factor which is detrimental to quality of life and jeopardizes environment is vehemently opposed and rejected. When it comes to food an enlightened and educated consumer feels that society should exercise more control over its production and processing. Consumers not only look for nutritive value of food but also safety, health and environmental aspects too. Knowledge and awareness of organic food could influence opinions and attitudes and ultimately purchase decisions.

The outcomes of the study reveal that all the respondents were aware of organic fruits and vegetables and ninety percent of them do consume them. They have a favorable attitude towards the purchase and consumption; some of them do grow their own organic fruits and vegetables. They consider it a healthy option and environment friendly too. Most of the respondents are not deterred by the high prices; probably coming from an agrarian background they understand the cost incurred in farms going organic. But organic fruits and vegetables supply is erratic and availability is not as smooth and regular as the non-organic ones. The consumers demand at least popular fruits and vegetables to be readily available on a regular basis. Nevertheless many believe that still more efforts are required to educate society to differentiate organic and non-organic fruits and vegetables, with strategies such as through labeling organic products that would suffice to a great extent in creating confidence among consumers about the claims made on the organic status.

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