

ATTITUDES OF TOURISTS TO PURCHASING ORGANIC COTTON IN HAWAI'I

Shu Hwa Lin, Ph.D. Assistant Professor
University of Hawai'i at Mānoa¹
Honolulu HI 96822 USA

Abstract

This research examined the consumption patterns and attitude of Hawai'i tourists to organic cotton. Data were collected from face-to-face structured interviews of 158 tourists in the Hawai'i market. Data were analyzed with descriptive statistics and Chi-square tests to provide additional information about the association of variables. Significant associations were found between organic cotton ownership and organic eco-literacy and being active in protecting the environment. Significant ethnic differences were found in willingness to pay a higher price for organic cotton items. The results may assist organic product marketers.

Key words: organic cotton, Hawai'i, tourist, organic consumer

Introduction

Although organic cotton textiles were introduced to the market by European and USA clothing companies more than two decades ago, it is only much more recently that a substantial consumer market for organic products (both food and non-food items) has become established. An Organic Trade Association study showed that the sales volume for organic fibres in 2003 of US\$ 85 million (OTA 2004) was a 23% increase over sales for organic fibers in 2002. Organic cotton was the most popular organic fiber that consumers sought and purchased.

Cottons are popular and are common as store merchandise (Fadiga 2003). However, a casual look at the apparel inventories of major island retailers reveals that there is limited investment in organic cotton goods. Anecdotal evidence suggests that local 'green' consumers travel to the North Shore to find organic goods marketed by small alternative retailers, or shop for these with the small number of apparel companies that offer organic cotton goods on-line (Bunin 2001, Upadhyay & Bhamoriya 2004).

Some writers suggest that some of the same problems that plagued early developments in the organic food industry are also present in the development of consumer markets for organic cotton, and that the market for organic cotton can be expected to develop in ways comparable to the market for organic farm products (Paulitsch 2000). That the organic farm products market has grown substantially in the past few years is very evident in Hawaii. Organic vegetables – once available only in the produce departments of alternative health grocers such as Down To Earth and the Co-op – are now highly visible in the inventories of all of the Islands' mainstream grocers. Recently, selected stores in the Star Market, Foodland, Safeway, and Times Market chains have reoriented their purchasing, display, and marketing strategies to emphasis pricey organic and gourmet foods. With appropriate strategies, a comparable local market could be developed for apparel and related goods fabricated from organic cotton. This growth potential provides a unique opportunity for Hawai'i to develop a niche in the organic fibers market before it is established elsewhere.

Understanding consumers is very important for good business. Accurately predicting the results of marketing right from the start can be crucial to business success. Businesses that understand consumers can develop precise market strategies to satisfy specific consumers and accomplish their business goals. Research suggests that supermarkets provide a successful model for marketing organic food products (Laroche, Bergeron & Barbaro-Forleo 2001). It has been suggested that apparel manufacturers and retailers have not provided the ideal shopping environment for organic fiber products (Nolan 2006, O'Reilly 2006).

¹ Address: 2515 Campus Rd, Miller 201F, Honolulu, HI 96822, USA
e-mail: lins@ctahr.hawaii.edu
Tel: +1- 808-956-2245
Fax: +1-808-956-2250

This project is designed to provide more insights into the Hawai'i organic cotton product market by examining organic cotton in the Hawai'i market and analyzing tourists' shopping behaviors and attitudes. This project also seeks to construct the demographic, psychological and behavioral profiles of tourists as consumers who are willing to pay more for environmentally friendly cotton products. The US textile industry actively encourages and promotes environmentally sound production practices, including increasing investment in the production of cleaner 'organic' cottons. However, organic cotton garments are not widely marketed and consumer markets for existing organic cotton products are weak. With few main-stream brand names pioneering the use of organic cotton, it has not achieved widespread popularity. However, Nike, Coop Switzerland, Patagonia, Otto and Sam's Club/Wal-Mart were the five brands using the most organic cotton globally in 2005 (Adler 2006, O'Reilly 2006, Speer 2000).

Reports suggest that key barriers to consumers purchasing organic cotton goods include the following reasons: organic cotton goods tend to be higher in price than comparable garments (USDA Agricultural Trade Reports 1996); consumers are unwilling to trade lower prices for environmentally responsible consumption (Nimon & Beghin 1999); consumers value the bright, vivid colours associated with conventional cottons over the softer tones of organic cotton products (Mohammadioun, Gallaway & Apodaca 1994); a lack of legal restrictions on use of the terms 'green' and 'eco' allow conventional cotton garments to be falsely promoted as eco-friendly (Adler 2006, O'Reilly 2006, Dembkowski & Hanmer-Looyd 1994); consumers are unaware of differences between organic and conventional cotton (Mohammadioun, Gallaway & Apodaca 1994); organic cottons are not easy to find in the marketplace; and many consumers lack concern for the environment (Mohammadioun, Gallaway & Apodaca 1994).

Recent magazine reports about politics or lifestyle have raised the awareness amongst some customers of environmentally friendly products organic food and non-food items. However, marketing strategies for organic cotton remain underdeveloped. A national survey revealed that the number of organic food consumers is growing, and that consumers who did not purchase organic items in the past had a lack of awareness (The Hartman Group 2000). To find the target consumers who are willing to pay a higher price for organic cotton items is the ultimate goal for textile business. Organic cotton product developers, manufacturers, and retailers may be interested in the associations between organic cotton ownership, organic eco-literacy, and being active in protecting the environment.

Characteristics of consumers of organic products

Organic cotton has been defined as a niche-market product (Ton 1999). A very limited amount of general research is available on the profile of organic cotton consumers. The conceptual framework guiding this study was modified from models of the profile of consumers of environmentally friendly products as suggested by Fotopoulos & Krystallis (2002); Gifford & Bernard (2006); Laroche, Bergeron & Barbaro-Forleo (2001); and Kim & Damhorst (2005), and for the consumers' knowledge and ecoliteracy from the conceptual framework of Laroche, Bergeron and Barbaro-Forleo (2001). These researchers suggested that some consumers are willing to pay more for environmentally friendly products, based on gender, attitude, and eco behavior (Laroche, Bergeron & Barbaro-Forleo 2001). The profile of the health-conscious Greek organic consumer who would purchase organic items was elucidated by Fotopoulos and Krystallis (2002), and it was found that age was not a factor influencing purchase decision.

There are numerous studies on organic cotton, organic textiles, and ecomarketing. These include a study from Europe on a small textile company that operated successfully in the organic cotton-textile supply chain (Kogg 2003), a report on organic cotton supply chains in global marketing (Goldbach, Seuring & Back 2003), an investigation on material and social conditions that affect organic cotton production and niche marketing (Bunin 2001), a report on the economic value of an eco-label in the textile and apparel industry (Nimon & Beghin 1999), and an analysis of the organic cotton marketing situation and interest among consumers (Mohammadioun, Gallaway & Apodaca 1994). Kim and Damhorst (2005) suggested that an increase in consumers' environmental awareness did not correspond to an associated change in shopping behaviors. Also, research suggests that

environmentally friendly attitudes are not necessarily related to environmentally friendly behavior (Kim & Damhorst 2005). However, this project is the first study, we are aware of that examines consumers' knowledge, attitudes, and shopping behaviors regarding organic cotton products in the marketplace.

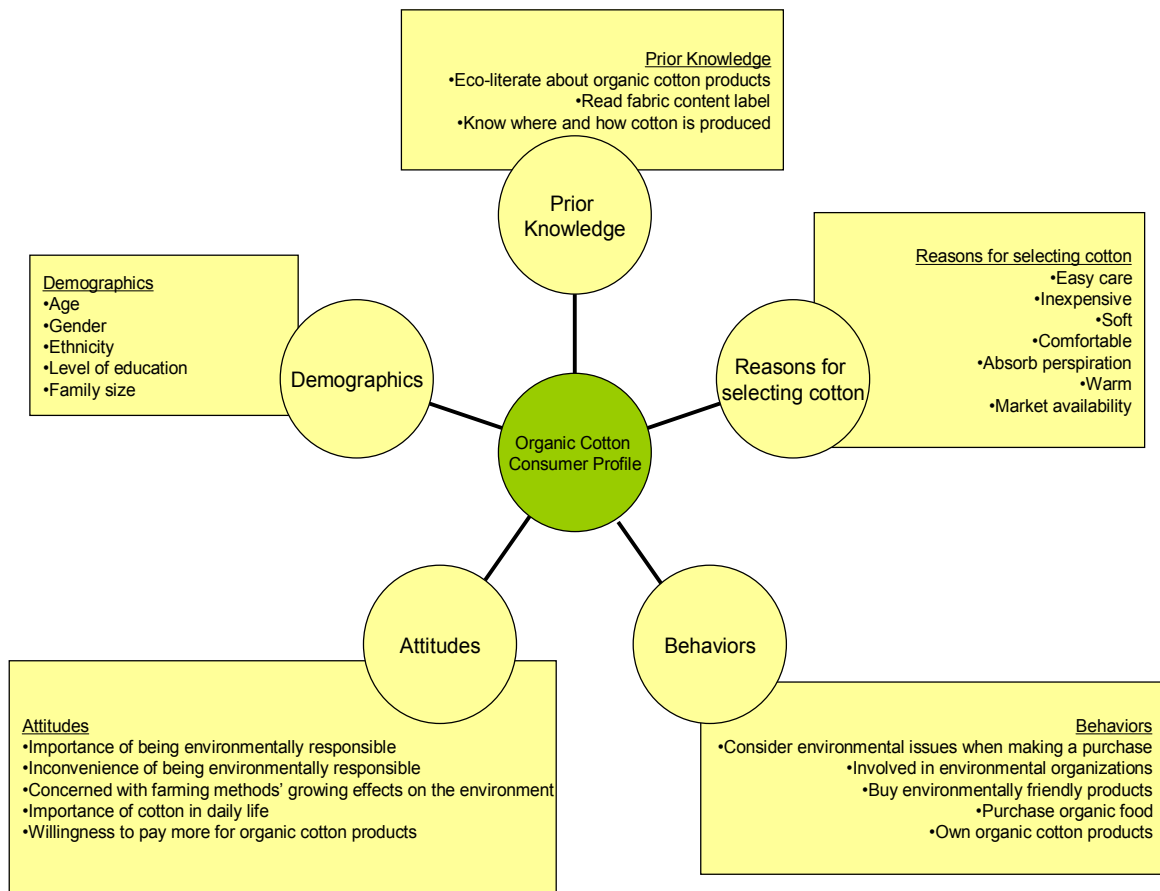
Most literature suggests that importance and inconvenience are major factors influencing environmentally friendly attitudes and behaviors. While it may be inconvenient to be environmentally responsible, some consumers take personal environmental responsibility seriously and are concerned about the effects of farming methods on the environment. These consumers feel that cotton is important in daily life, and are willing to pay higher prices for environmentally friendly products (O'Reilly 2006). Other consumers may have a high sense of ecological awareness but feel that the preservation of the environment has nothing to do with their daily lives (Adler 2006).

Researchers have reported a 30-45% cost premium for organic cotton products and a 12.5% cost premium for organic cotton apparel (Nimon & Beghin 1999). Currently, the price of naturally coloured, organic, or 'green' cotton products, at generally 10 to 30% more than comparable items made from conventional cotton puts them in the top-end of the market. Accordingly, price could be a factor in influencing consumer purchase of organic cotton products. Consumer attitudes include such factors as consideration of environmental issues when making a purchase, involvement in environmental organizations, purchase of other environmentally friendly items (i.e., organic food and non-food items), and prior ownership of organic cotton products.

Profile of the organic cotton consumer

The labeling of a product as eco-friendly requires an understanding of consumers and an analysis of consumer attitudes to match products with the needs of consumers (Laroche, Bergeron & Barbaro-Forleo 2001). A process for consumer analysis and a model modified and adapted from theories about organic product consumers (Fotopoulos & Krystallis 2002), (Gifford & Bernard 2006), (Laroche, Bergeron & Barbaro-Forleo 2001) is shown in Figure 1. This provides a conceptual framework for establishing the profile of the organic cotton consumer. It takes into account consumer demographics, prior knowledge, reasons for selecting cotton, shopping attitudes, and behaviors. Organic cotton consumers are identified by age, gender, ethnicity, level of education, and family size. Their prior knowledge includes eco-literacy about organic cotton, the contents of the fabric label, and knowledge concerning where and how cotton is produced. Consumers' reasons for selecting cotton include matters of care, price, softness, comfort, absorbency, warmth, and availability in the market (Fadiga 2003). Consumer attitudes include the importance and inconvenience of being environmentally responsible, concern about the effects of farming methods on the environment, importance of cotton in daily life, and willingness to pay higher prices. Consumer behaviors include consideration of environmental issues when making a purchase, involvement in environmental organizations, purchase of other environmentally friendly items (i.e., organic food and non-food items), and ownership of other organic cotton goods.

Figure 1: Conceptual framework of the consumer-profile



Many apparel consumers, particularly those concerned with environmental issues, are attracted to natural fibres on the assumption that natural fibres have less impact on the environment than artificial fibres. While this may be true, the environmental impact of the production, use, care, and disposal of natural fiber products, and particularly conventionally produced cotton products, is substantial. Cotton fiber and fabric production results in soil erosion; extensive use of agricultural chemicals; uses large amounts of water for fabric cleaning and dyeing; has to dispose of waste dyes, chemicals, and harsh cleaning compounds; results in the use of further environmentally damaging chemicals by consumers to meet product care and cleaning requirements; and current landfill management practices do not allow discarded cotton fabrics to decompose completely.

Cotton is the most significant of all apparel fibres. Over 55% of the world demand for apparel fibres is for cotton. Consumers' reasons for selecting cotton include matters of product care, price, softness, comfort, absorbency, and warmth. Widespread availability in the market place is also likely to contribute to popularity. However, organic cotton products are not easy to find in the marketplace. Many mainstream textile and apparel manufacturers and retailers hesitate to use organic cotton because they do not know the current level of consumer interest in and/or the potential level of acceptance for organic cotton goods. Consequently, businesses are unable to gauge demand and they think that the risk of a return on such an investment is high.

Cotton fabrics are cool and comfortable and they dominate Hawai'i's apparel market place. The wear-characteristics of cotton textiles have historically attracted consumers to cotton garments. Cottons are particularly common in the merchandise inventories of local muumuu and aloha shirt retailers. However, while organic food products are highly visible in grocery stores, there is only a handful retailer currently stocking organic cotton products on the island of Oahu. Although the Textile Fiber

Products Identification Act (1958, 1998) does not require identification of organic cotton; however, a label usually does identify organic cotton.

Purpose

This project was developed to investigate attitudes, shopping behaviors, and ownership of organic cotton products by Hawai'i tourists with regard to organic cotton products and their ownership of organic cotton items. It was proposed that consumers who purchase organic foods based on health and environmental concerns would also adopt organic fibers based on those same concerns.

The objectives were to (1) investigate knowledge of organic cotton among tourists in Hawai'i, (2) describe organic cotton product consumption among the tourists, (3) investigate the importance of adopting organic cotton to tourists as consumers in the state of Hawai'i, and (4) examine the relationship between organic food consumption and the adoption of organic cotton clothing among tourists to Hawai'i.

Method

A face-to-face or telephone structured interview was used to collect data from 389 Hawai'i consumers, including residents and tourists. A questionnaire (see Appendix) was developed and pre-tested with students in a sophomore level textile class at the University of Hawai'i, then revised and pilot-tested with consumers. The questionnaire included closed or restricted answers (binary and multiple). The interviewee was offered a series of coded options from which to choose the one best reflecting his/her shopping behavior, attitude, position, or opinion. The questions focused on the following topics: (1) organic food consumption, (2) organic product knowledge and ownership of organic cotton items, and (3) demographic information. Demographic information is placed in the last section of the interview because participants tend not to reveal themselves in the beginning of a conversation. The research questionnaire should develop good rapport before asking intimate personal questions.

All interviewees were selected from public places, including campus, restaurants, hotels and shopping malls. After a personal greeting each interviewee was asked to participate in the survey. More than 95% of the data were collected through face-to-face interviews with these subjects. Less than 5% of the data were collected through telephone interviews by using the same questionnaire sequence that was used in face-to-face interviews. Data were analyzed with descriptive statistics, including percentages and two-way frequency distributions. Chi-square tests were also constructed to provide additional information about the association of variables.

Results

This is an ongoing research project. Data were compiled from interviews of 158 tourists who were 18 years or older. The subjects included 94 female and 49 male tourists. Subjects were from a range of ethnic groups including: 37% (n=58) Japanese, 26% (n=42) Caucasian, 9% (n=14) Chinese, 4% (n=6) Korean and 24% (n=38) others.

More than 65% (n=103) of subjects held college degrees, 12% (n=19) graduate degrees, and 17% (n=27) high school diplomas. The remaining subjects (less than 5%) had no high-school education. Approximately 56% (n=90) of the subjects were 18 to 24 years old, 14% (n=22) were 26-35 years old, and the remaining 30% (n=46) were older than 35. Table 1 summarizes the demographic information. Approximately 70% of subjects (n=112) had no children, less than 9% (n=18) had children under 6 years old, and less than 8% (n=18) had children over 18 years old. Less than 5% (n=12) of subjects had children from 7-18 years old.

Table 1: Details of Interviewees

	n	percent of total
Resident status		
Hawaii visitors	158	100 %
Gender		
Female	103	65 %
Male	55	35 %
Ethnic group		
Caucasian	42	27 %
Japanese	58	37 %
Chinese	14	9 %
Korean	6	3 %
Other	37	23 %
Missing data	1	1 %
Level of education		
Under high school	7	5 %
High school	27	17 %
College	103	65 %
Graduate school	19	12 %
Other	2	1 %
Age		
18-25	90	60 %
26-35	22	13 %
36-45	18	11 %
46-65	18	11 %
65+	4	2 %
Missing data	6	3 %
Family size*		
Children under 6	18	9 %
Children 7-12	5	1 %
Children 13-18	7	2 %
Children above 18	18	8 %
No children	112	70 %

* Multiple responses allowed

Organic products consumptions

More than half of the interviewees (50%, n=80) consumed some organic food. About one third (32%, n=51) responded that less than 25% of their food consumption consisted of organic products, less than 20% responded that more than 50% of their food consumption was organic, and less than 3% of the subjects stated that they consumed nearly 100% organic food. Less than a quarter of subjects (n=35, 22%) were involved in an environmental protection organization. More than eighty percent of subjects (n=105, 66%) thought that organic cotton is more environmentally friendly than conventional cotton, while less than 20% (n=30) responded that there is no difference between conventional and organic cotton. Data for organic food consumption and participation in environmental protection organizations are summarized in Table 2. Only nine subjects (n=9, 6%) responded that cotton is not very important in their life. Half of the subjects reported that cotton fabric is of average importance in their life. About one third of the subjects (n=51, 32%) said that cotton fabric is of high or very high importance in their life.

Ownership of organic cotton clothing

Approximately 17% of the subjects reported owning organic cotton products (n=27, 17%) and 10% (n=16) reported owning more than one item of organic cotton clothing. Caucasians reported owning organic cotton items more often than other ethnic groups (n =12, 33%), and consumers aged between 18 and 25 (n= 21, 58%) reported owning organic cotton items more often than other age groups. Organic cotton ownership can be also found in the Table 2.

Table 2: Summary of Organic Product Consumption

	n	percentage of total
Organic food consumer		
Yes	80	51 %
No	70	49 %
Organic food consumed as % of total food consumed		
0%	63	40 %
<25%	51	32 %
25-50%	17	11 %
50-75%	10	6 %
75-100%	4	3 %
Don't know or missing data	13	8 %
Participation in environment-protection organization		
Yes	35	22 %
No	120	76 %
Missing data	3	2 %
The importance of organic cotton as compared to conventional cotton		
No difference	30	19 %
Conventional cotton is natural fibre, Organic cotton is not	3	2 %
Conventional cotton is more environmentally friendly than organic cotton	10	6 %
Organic cotton is made with more chemicals than conventional cotton	10	6 %
Organic cotton is more environmentally friendly than conventional cotton	105	67 %
The importance of cotton in respondent's life		
Not important	9	6 %
Low	18	11 %
Average	79	50 %
High	35	22 %
Very high	16	10 %
Missing	1	1 %
Number of organic cotton clothing items owned		
1-5	16	10 %
6-10	8	5 %
11-20	2	1 %
All organic	1	1 %
None	131	83 %

Prior knowledge

More than 66 % (n=105) of the subjects responded that organic cotton is more environmentally friendly than conventional cotton, while less than 20 % of the subjects (n=30) responded that they thought that there was no difference between conventional and organic cotton. In the open-ended questions, only a very limited number of respondents were able to accurately describe where and how cotton was produced. Less than a quarter of the subjects were able to correctly answer questions about the use of chemicals to produce t-shirts, and less than a fifth of subjects failed to guess correctly the amount of chemicals used to produce a pair of jeans. Approximately 12 to 24% of subjects could guess correctly the amount of chemicals used to produce a pair of jeans or T-shirt. Coincidentally, just about 20% of respondents reported that they owned organic items. This result supports the national survey that indicates consumers did not purchase these items because of a lack of awareness or knowledge about organic items (The Hartman Group 200).

Table 3: Results of Subjects Responding to Chemical Used to Produce a T-Shirt or a pair of Jeans

	n	Percentage of total
T-shirt		
Correct answer	38	24%
Failed to guess	120	76%
Pair of jeans		
Correct answer	19	12%
Failed to guess	139	88%

Willingness to pay more

More than half of subjects responded that they were willing to pay more for organic cotton items (n=81, 51.26%). Females subjects (n=51) were more willing to pay more for organic cotton items than male subjects (n=30). Thirteen specified that they would pay more to purchase organic cotton products under some conditions, such as dealing with certain health issues. The results of responses regarding the willingness to pay more for organic cotton products are summarized in Table 4a.

Table 4a: Results of Subjects will pay more to purchase organic cotton items

	n	Percentage of total
Willing to pay more		
Yes	81	51%
Female	51	
Male	30	
No	56	36%
Female	35	
Male	21	
Not sure	21	13%

This study investigated whether consumers were willing to pay more money to buy organic-cotton products. The ethnicity of consumers may influence their willingness to pay a higher price for organic-cotton items. Based on a chi-square test $\chi^2(4, N=158) = 9.792, p < 0.04$, significant ethnic differences (i.e., Caucasian, Japanese, Others) were found in willingness to pay a higher price for organic-cotton items (see Table 4b). Unique to Hawaii and several other states such as California, are multi-ethnic nature of our population. In the current sample, multiethnic respondents were categorized as "Others (n=48) or approximately 30% of this sample.

Table 4b: Ethnic groups will pay more to purchase organic cotton items

Ethnic Groups	Yes	No
1. Japanese	23	35
2. Caucasian	18	24
3. Chinese	5	9
4. Korea	0	6
5. Others	23	15
Total	69	89

Discussion

One of the objectives of this study was to examine the hypothesis that consumers who purchase items based on health and environmental concerns would also adopt organic cotton based on those same concerns. The results supported part of this hypothesis.

Two-way frequency distributions of the ownership of organic cotton by organic food consumption, eco-literacy and involvement in protecting the environment, and shopping behaviors are presented in Table 5. Frequencies of ownership of organic cotton and organic food consumption are shown in the first section of this Table. About a quarter of organic cotton owners (19 out of 80) consumed some organic food. People who owned organic cotton items indicated that they were also organic food consumers. Based on a chi-square test $\chi^2(1, N=158) = 3.39$; $p=0.122$, no significant associations were found between organic food consumption and ownership of organic cotton items.

Frequencies of the ownership of organic cotton and eco-literacy are shown in the second section of Table 5. More than half of organic cotton owners ($n=26$) gave thought to the amount of chemicals it takes to produce apparel items. People who own organic cotton items appeared to be conscious of the amount of chemicals used to produce apparel items. Based on a chi-square test $\chi^2(1, N=158) = 17.1777$; $p<0.00005$, highly significant associations were found, illustrating that organic cotton consumers were knowledgeable about the amount of chemicals to produce apparel items.

About 15% of organic cotton consumers (12 out of 80) were active in protecting the environment or belonged to an environmental organization (shown in the third section of Table 5). People who were active in protecting the environment or belonged to an environmental organization were willing to purchase organic cotton items. Based on a chi-square test $\chi^2(1, N=158) = 6.841$; $p<0.01$, significant associations were found, illustrating that organic cotton consumers were active in protecting the environment and were likely to belong to an environmental organization.

About 84% of organic cotton consumers (19 out of 80) would pay more to purchase organic cotton items (as indicated in the last section of Table 5). People with prior ownership of organic cotton items were willing to pay more for organic cotton items. Based on a chi-square test $\chi^2(1, N=158) = 2.158$; $p=0.14$, no significant associations were found between organic cotton consumers and a willingness to pay more for organic cotton items.

Table 5: Own organic cotton items which differed significantly by attitude and behavior

	Yes	No	df	chi-square	p
1. Organic food consumer	19	61	1	2.39	0.12211363
2. Thinking about the amount of chemicals it takes to produce apparel items	26	19	1	17.1777	0.00003**
3. Active in protecting the environment	12	22	1	6.841	0.0089089*
4. Willing to pay more	19	62	1	2.158	0.14182919

* significant at chi-square test at $P < 0.01$

** significant at chi-square test at $P < 0.0001$

n = 158

Implications and conclusions

Organic cotton apparel has been defined as a niche-market product and this research supported that observation, to the extent that, among Hawai'i tourists, ownership of organic cotton products was correlated with gender, organic food consumption, and willingness to pay higher prices for organic cotton goods. Female subjects in the study were more willing to pay more for organic cotton items than male subjects. The results of this study support the findings of other researchers that there are gender differences in the purchase of ecologically-friendly items (Balderjahn, 1988; Banerjee & McKeage, 1994; Butler & Francis, 1997; McIntyre, Meloche, & Lesis, 1993).

A significant association was found between ownership of organic cotton items and prior knowledge about the amount of chemicals used to produce apparel items. People who already owned organic cotton items were more active in protecting the environment or belonged to an environmental organization. Amongst the respondents to this survey, people who owned organic cotton items knew more about the amount of chemicals used to produce apparel items.

Research suggests that it costs about the same to grow organic cotton as it does to grow cotton with conventional fertilizers (Adler 2006, p. 48). If this is the case, then the higher prices currently charged for organic cotton goods represent marketing strategies rather production costs. This suggests that the niche market for organic cottons could be enlarged, or that additional niche markets could be developed at lower price levels.

To better respond to consumer needs, businesses must understand the consumer demands, and to achieve effective consumer-oriented marketing, businesses must analyze consumer habits. Profiles of organic product consumers and/or of consumers who expressed concern about environmental issues were outlined in the works of Butler and Francis (1997), Fotopoulos and Krystallis (2002), Gifford and Bernard (2006), Kim and Damhorst (2005), and Laroche, Bergeron, and Barbaro-Forleo (2001). The results of the study reported here suggest that these profiles can be modified to present a model of the potential organic cotton consumer among tourists to Hawai'i.

It is likely that the profile of Hawai'i tourists is similar to organic cotton consumers in general. The present study suggests that the potential market for organic cotton products is under-developed. In particular, it suggests that the people who purchase organic food are potential consumers of organic cotton. Retailers may be able to expand the consumer base for organic cottons by developing market

strategies based on the organic cotton consumer profile, in combination with the supermarket model of making organic cotton products more visible in the marketplace.

Acknowledgments

Financial support from US Department of Agriculture; State Agricultural Experiment Station and Other Institutions, Project No. AD-42 Hatch Fund; is acknowledged. The author would like to thank reviewers and editors for the valuable comments that they provided on a draft of this article.

References Cited

- Adler, J 2006, 'The new greening of America', *Newsweek*, 17 July. pp. 42-52.
- Balderjahn, I 1988, 'Personality variables and environmental attitudes as predictors of ecologically responsible consumption patterns', *Journal of Business Research*, 17 (1): 51-56.
- Bunin, L.J 2001, *Organic Cotton: The Fabric of Change*, PhD thesis, University of California, Santa Cruz, CA.
- Dembkowski, S & Hanmer-Looyd, S 1994, 'The environmental value-attitude-system model: a framework to guide the understanding of environmentally-conscious consumer behaviour', *Journal of Marketing Management*, 10: 563-603..
- Fadiga, ML 2003, *U.S. Consumer Demand for Cotton Apparel: Implications for the Apparel Industry*. PhD thesis, Texas Technical University, Lubbock, TX.
- Fotopoulos, C & Krystallis, A 2002, 'Purchasing motives and profile of the Greek organic consumer: A countrywide survey', *British Food Journal*, 104 (8-9): 730-766.
- Gifford, K & Bernard, JC 2006, 'Influencing consumer purchase likelihood of organic food', *International Journal of Consumer Studies*, 30 (2): 155-163.
- Goldbach, M. Seuring, S. & Back, S. 2003, Autumn, 'Co-ordinating sustainable cotton chains for the mass market. *Greener Management International*', vol. 43, pp. 65-79.
- Kim, HS & Damhorst, ML 2005, 'Environmental concern and apparel consumption', *Clothing and Textiles Research Journal*, 16 (3): 126-134.
- Kogg, B Autumn 2003, 'Greening a cotton-textile supply chain: a case study of the transition towards organic production without a powerful force company', *Greener Management International*, 43: 53-66.
- Laroche, M Tomiuk, M Bergeron, J & Barbaro-Forleo, G 2002, 'Cultural differences in environmental knowledge, attitudes, and behaviours of Canadian consumers', *The Journal of Administrative Sciences*, 19 (3): 267-384..
- Laroche, M Bergeron, J & Barbaro-Forleo, G 2001, 'Targeting consumers who are willing to pay more for environmentally friendly products', *The Journal of Consumer Marketing*, 18 (6): 503-521 Nimon, W. & Beghin, J., 1999. 'Are eco-labels value? Evidence from the apparel industry. *American Journal of Agricultural Economics*', Vol. 81, no. 4, pp. 801-811.
- Mohammadioun, M Gallaway, M & Apodaca, JK 1994, *An Economic Analysis of Organic Cotton as a Niche Crop in Texas*, Research Monograph 1994-1, Bureau of Business Research, Graduate school of Business', The University of Texas at Austin, retrieved May 7, 2005 from: <http://www.utexas.edu/centers/nfic/about/publications/ocotton.html>
- Nolan, K 2006, 'Organic clothes grow past Woodstock crew', *DSN Retailing Today*, 45 (9): 5-6
- O'Reilly, G February 2006, 'Organic evolution', *Promotions & Incentives*, pp. 25-27.
- Organic Trade Association, 2004, *The OTA 2004 manufacturer survey overview*. Greenfield, MA, retrieved March 23, 2005 from: <http://www.ota.com>
- Ottman, JA 1999, 'Will the consumer pay a premium for green?' *In Business*, 21 (4): 36.
- Speer, JK 2000, 'Patagonia: Shearing the edge of innovation', *Apparel*, 47 (9): 44-47.
- The Hartman Group, 2000, *The organic consumer profile*. Bellevue, WA.
- Ton, P (ed) 1999, *The market for organic cotton organic cotton: from field to final product* (pp. 86-100). Intermediate Technology Publications Ltd (ITP), London, pp86-100.

Upadhyay, B & Bhamoriya, V 2004, 'Drip irrigation helps women farmers to expand production', *Appropriate Technology*, 31 (2): 44-48.

USDA Agricultural Trade Reports, June 11, 1996, *Italy: Cotton Annual Report (2)* retrieved April 7, 2007 from:
<http://proquest.umi.com/pqdweb?did=206150381&sid=1&Fmt=3&clientId=23440&RQT=309&VName=PQD>

Appendix

Questionnaire

1. Are you an organic food consumer?

☐ Yes (go to question 2) ☐ No (go to question 3)

2. What percentage of the foods you eat is organic?

☐ < than 25% ☐ 25%-50% ☐ 50%-75% ☐ 75%-100%

☐ <don't know, others

3. Are you active in protecting the environment, or do you belong to any environmental organizations?

☐ Yes ☐ No ☐ Others, please specify _____

4. Have you ever given thought to the amount of chemicals it takes to produce apparel items?

☐ Yes ☐ No

5& 6. Please guess the amount of chemicals it takes to produce a regular cotton T-shirt and a pair of jeans?
Tshirt

☐ 1oz or less ☐ 1/4 lb ☐ 1/2 lb ☐ 3/4 lb ☐ 1 lb ☐ 2 lb or more ☐ Others, please specify

Jeans

☐ 1oz or less ☐ 1/4 lb ☐ 1/2 lb ☐ 3/4 lb ☐ 1 lb ☐ 2 lb or more ☐ Others, please specify

7. What is the difference between conventional cotton and organic cotton? (Check all that apply)

☐ No difference

☐ Conventional cotton is a natural fiber; organic cotton is not

☐ Conventional cotton is more environmentally friendly than organic cotton

☐ Organic cotton is made with more chemicals than conventional cotton

☐ Organic cotton is more environmentally friendly than natural cotton

8. Have you ever been concerned with issues concerning commercially grown cotton and its effects on the environment?

☐ Yes ☐ No ☐ Don't know or Others, please specify

9. Where can organic cotton products be purchased?

☐ Department store ☐ Specialty store

☐ Discount store ☐ On-line

☐ Others, please specify _____

10. Do you read the fabric content label before purchasing a garment? Why?

☐ Yes ☐ No ☐ Others, please specify

11. Do you prefer cotton to other fabrics for household? Why?

☐ Yes: ☐ Comfort ☐ Soft ☐ Tradition

☐ Market availability ☐ Others, please specify

☐ No ☐ Others, please specify _____

12. Why do you choose cotton to wear?

☐ Easy to care for ☐ Inexpensive ☐ Soft

☐ Comfort ☐ Tradition ☐ Absorb perspiration

☐ Market available ☐ Others, please specify

13. What is cotton used for? Name as many products as you can. Please specify: _____

- ☐ Clothing ☐ Household staff
☐ Medical usages ☐ Market available
☐ Others, please specify

14. How important is cotton in your life? (Low, moderate, average, high, very high)

☐ Not important ☐ Low ☐ Average ☐ High ☐ Very high

15. Do you prefer cotton to organic cotton, or organic cotton to cotton? Why?

☐ cotton, why _____

☐ organic, why _____

16. Do you own any garments made out of organic cotton?

☐ Yes: If yes, how many ☐ 1-5 ☐ 6-10 ☐ 10-20 ☐ All

☐ No ☐ Others _____

17. Where and how cotton is produced?

18. Would you be willing to pay more money to purchase organic cotton products, if you knew they were cleaner and healthier than conventional cotton products?

☐ Yes ☐ No ☐ Others, please specify _____

19. Age: ☐ <25 ☐ 26-35 ☐ 36-45 ☐ 46-65 ☐ >65

Children number: _____ ☐ under 6

_____ ☐ 7-12

_____ ☐ 13-18

_____ ☐ above 18 ☐ None

Education: ☐ under H. school

☐ H. School

☐ College ☐ Graduate

☐ Others, please specify _____

Ethnic group: ☐ Japanese ☐ Chinese ☐ Korean

☐ Caucasian ☐ Others, please specify

Gender: ☐ F ☐ M

Visitor: ☐ Specify _____ Resident ☐ Specify _____