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International Food and Agribusiness Management Review
Volume 13, Issue 4, 2010

Consumer Preferences for Imported Kona Coffee in South India A Latent Class Analysis

Jyotsna Krishnakumar^a and Catherine Chan-Halbrendt^b

^a*Graduate Student, Department of Natural Resources and Environmental Management,
University of Hawaii at Manoa, 1910 East-West Road, Sherman 101, Honolulu, Hawaii, 96822, U.S.A.*

^b*Professor, Department of Natural Resources and Environmental Management, University of Hawaii at Manoa,
1910 East-West Road, Sherman 101, Honolulu, Hawaii, 96822, U.S.A.*

Abstract

Considering India as a potential export market for 100% Kona coffee, this study explores consumer preferences for imported, specialty, high-end Kona coffee in South India. Conjoint choice experiment with latent class analysis is used and results indicate that India offers an export market potential for Kona coffee, provided it caters to consumer preferences. Results show a significant preference for strong taste. The relative importance of price is lower than taste but majority are also adverse to higher prices. However, 15% of the sample population does not care about price but does care about taste, indicating the possibility of a high-end niche market segment. Based on the results, marketing strategies and policy recommendations have been suggested.

Keywords: India, US Coffee Export, Kona Coffee, Conjoint Choice Experiment, Latent Class Analysis

[©]Corresponding author: Tel: + 1 808. 542. 8264
Email: jyotsna@hawaii.edu

Other contact information: C. Chan-Halbrendt: chanhalb@hawaii.edu

Introduction

USA-India Bilateral Trade Relationship

Historically, the U.S. and India have had bilateral trade relations and it has been increasing tremendously in recent years. India's merchandise exports to the U.S. were at \$ 6.50 billion for the period January -March 2010. This is a 25.6% increase from \$5.18 billion during the same period in 2009. Similarly, the U.S. exports of merchandise to India increased 20.4% from \$3.31 billion to \$3.99 billion for the same period (January – March) in 2009 and 2010 respectively. (India-US Trade, Embassy of India, in Washington DC). This is also the case with U.S. –India bilateral agricultural trade which has expanded about 9 % annually since 1990, reaching \$1.7 billion in 2007. U.S. agricultural exports to India grew 9.1 % per year during 1990-2007 with a total value of \$475 million in 2007, while U.S. imports from India grew 8.6% annually with a total value of \$1.2 billion in 2007 (USDA Economic Research Service). The main agricultural exports from U.S. to India include edible tree nuts (mainly almonds), raw cotton, fresh fruit (mainly apples), and pulses that has accelerated to 12% annually since 2000. A faster growth in “many categories of agricultural trade, including fruit and preparations, pulses, vegetables and preparations, and animals and animal products is also predicted.”

However, the export of grains and edible oil from the U.S. to India have declined mainly due to competition from other global suppliers. President Clinton, in 2000, announced the easing of economic sanctions against India and the restarting of the \$25 million Financial Institutions Reform and Expansion (FIRE) program to modernize Indian financial markets and also signed \$4 billion worth of business agreements. Cooperation in the small-scale sector was also reached between US and India during a visit to Washington DC in 2000, by the Indian Minister of State for Small Scale Industries and Agro & Rural Industries, along with a delegation representing the small and medium industry sector of India. During the visit, future cooperation between US Small Business Administration (SBA) and the Ministry of Small Scale Industries were also discussed and agreements were reached (India-US Trade, Embassy of India, in Washington DC). Thus, with India's fast rising income per capita (Business Line Report, The Hindu 2009), investment friendly policies, relaxed import regulations, and strengthened trade agreements between U.S. and India, there is a greater potential for importing more U.S. goods to India for trade. This paper explores if Kona coffee offers an export potential from U.S. to India.

Coffee Consumption Trends in India

Coffee is one of the most traded commodities in the world and India is the world's sixth largest producer, accounting for over 4% of world coffee production (Coffee Consumption in India, 2008). As far as domestic demand for coffee is concerned, it is largely confined to the southern regions particularly the states of Karnataka and Tamil Nadu (Coffee Consumption in India on the Rise, 2005; Radhakrishnan and Reddy 2007). However, new trends are emerging with coffee being just a traditional South Indian drink to becoming a trendier beverage in India as a whole (Coffee Consumption in India, 2008). According to the chairman of the Coffee Board of India, Mr. G.V. Krishna Rao, coffee consumption in India is expected to increase 18% from 102,000 metric tons in 2010 to a projected 120,000 metric tons by 2012. In addition, industry sources say that the niche coffee market is growing at 10-12% a year, with branded coffee accounting for

53% of the sales (Bharadwaj 2006). Also, according to Mr. Siddartha, Chairman of Amalgamated Coffee Bean Trading Co. Ltd. (ABTCL), one of the largest growers and exporters of coffee, “there is a shift in consumer preference towards pure coffees on the back of growing affluence and income levels” adding that the country could transition from a net exporter to a net importer. In fact “good quality imported coffee will get recognition in the country with an increased demand” (Business Line Report, The Hindu, 2009). In other words, India offers niche market opportunities for high-end exclusive coffee, value added in terms of the flavor, the type of coffee (especially the highly priced *Coffea arabica* species), its place of origin, and the exclusivity in terms of high quality and limited production associated with it.

The U.S. Coffee Industry-Hawaiian Kona Coffee

Hawaiian Kona coffee is one of the main suppliers for *Coffea arabica* and they are grown on the slopes of North and South Kona district of Big Island, Hawaii. It has a reputation for being one of the most expensive and sought after coffee in the world. The coffee production in Kona for 2007-2008 was approximately three million pounds (Hawaii Department of Agriculture, 2009) with average exports of over 200,000 pounds per year at an estimated value of \$6 million. (Instant Hawaii, <http://www.instanthawaii.com/cgi-bin/hawaii?Plants.coffee>). However, in the past decade, the reputation of Kona coffee has suffered due to issues with blending. Much of the coffee sold in commercial markets by large companies contains only 10% Kona beans but carry the “Kona coffee” label. According to the Hawaii State Legislature, “existing labeling requirements for Kona coffee causes consumer fraud and confusion and degrades the ‘Kona coffee’ name” (Senate Concurrent Resolution No. 102, 2007). Initiatives have been undertaken by the Kona Coffee Farmers Association to seek greater legal protection of the Kona coffee name. In fact, they prefer to market 100% pure Kona coffee for its high quality and the high value it can demand (Feldman 2010). However, this also implies the need to explore new markets for 100% Kona coffee. Currently, 93% of the export market for Kona coffee is in Japan for all coffee types—green, roasted beans of regular and decaffeinated coffees. The remaining portion of exports is to other parts of Asia, especially South Korea and Taiwan, and also to Europe. With the expected higher per capita income in other parts of Asia such as India, a greater export market potential for 100% Kona coffee to these regions is perceived (Felming and Nakamoto, 2003). Unfortunately, lack of awareness and knowledge of new and expanding markets, or the inability to find them pose challenges to the Kona farmers. Studies indicate key factors that can positively affect the demand for Hawaiian grown Kona coffee and they are: 1. Consumers are willing to pay high price for a product known for its high quality and brand image; 2. Changes in the economic conditions of the regions where it is marketed (Southichack 2004).

The current coffee exports from U.S. to India are only 23 metric tons (46,552lbs) for 2007-08 and these exports are mainly classified as “roasted non-decaf, extract essence and concentrates and other coffee” (Coffee Consumption in India, 2008). Based on earlier discussions it is obvious that there is a benefit for Kona coffee growers to explore new export markets for their high quality 100% Kona coffee. As mentioned earlier, with the changing economic scenario in India and a predicted increase in demand for imported coffee, India can be a potential export market for 100% Kona coffee positioned as a high-end specialty product and sold at profitable returns that the Kona coffee producers can target.

Studies indicate that one reason why Kona coffee has been able to capture the Japanese market is due to innovative marketing strategies, mainly through niche marketing. Hawaiian exporters successfully established close ties with the Japanese consumers as they understood the culture, their preferences and tastes. This is because a better understanding of the consumers' preferences and needs would provide the growers a competitive edge over others (Fleming and Nakamoto 2003). Considering this, market study for exploring consumer preferences for Kona coffee in India, particularly South India and its niche market potential as a high-end specialty coffee needs to be undertaken.

Objectives of the Study

The main objective of the study is to explore consumer preferences for imported, specialty, high-end Kona coffee in South India. Two specific objectives to meet the overall objective are: 1) Explore South Indian coffee consumers' buying habits and knowledge of imported specialty coffee; 2) Find out South Indian consumers' preferences for Hawaiian specialty Kona coffee and explore potential for niche markets.

Review of Literature

The main focus of this study is exploring consumer preferences for Kona coffee in South India. Consumer purchasing decisions of a product are usually based on the importance of product attributes along with the socio-demographics of the consumers. This applies to the case of coffee as well. Various coffee studies have been conducted with a focus on consumer behavior, coffee preferences and consumption characteristics. They include exploring consumption preferences among young consumers for instant coffee; the influence of branding and advertisements on coffee choices; the influence of price, volume, packaging, place of origin, and product image on coffee choices (Tseng 1991; Lu and Hung 2000; Su and You 1999).

A study in Singapore hypothesized that, for international consumers, country of origin could be important for making purchasing decisions. The study examined the influence of country of origin of a product relative to other product attributes on preferences for food staples such as bread and coffee. Results revealed, in addition to country of origin, price and brand are important attributes (Ahmed et al. 2004; Chung and Jay 1997). A study on instant coffee preferences among consumers in Taiwan using conjoint analysis concluded that market potential for coffee products improve when important coffee attributes preferred by consumers are considered. The study explored the preferences for instant coffee by regional consumers of Taiwan and found that the price was most important followed by brand, packaging material and taste (Shih et al. 2008). Another study conducted in Belgium on coffee preferences for fair-trade coffee, also using conjoint analysis, explored how consumers trade-off between different coffee attributes and making ethical choices. The key questions raised focused on investigating the relative importance attached to the coffee being fair-trade coffee compared to other coffee attributes such as blend, brand, flavor, and packaging, and determining what was the willingness to pay for fair-trade coffee. The study also determined the socio-demographic differences influencing purchasing preferences. The results indicated brand attribute to be of highest relative importance followed by the fair-trade label and flavor. Packaging and blending were of the least importance. (Pelsmacker et al. 2005). The results of another study on the consumer preferences for fair-trade

coffee in Toronto, Canada, using conjoint choice analysis, show that, regardless of location, consumers place a strong preference for price and labeling claims (Cranfield et al. 2010). Studies exploring socio-demographic influence on coffee preferences in Europe showed consistent variations in terms of nationality, gender and age, with gender and age showing significant effects on coffee preferences and coffee brands (Cristovam et al. 2000; Heidema and Jong 1998). Last but not the least, studies also show that the reputation of the quality of a country's product varies based on the type of product. In other words, if a country is perceived to have a good reputation for a specific product, consumers are more willing to buy the product from that country (Ahmed et al. 2004; Roth and Romea 1992). This is highly applicable in the case of commodities such as coffee. For example, Colombian coffee (Ahmed et al 2004) or Kona coffee has a reputation attached to it mainly due to the perception of high quality associated with coffee from these regions.

The afore-mentioned studies clearly indicate that consumer purchase preferences of coffee is a function of the product attributes rather than a function of the product alone. The key product attributes in the case of coffee were identified as price, place of origin, taste and flavor/blend/grind preferences. Therefore drawing from the conclusions of these preference studies on consumer goods, this study attempts to explore South Indian coffee consumers preferences for Hawaiian specialty Kona coffee using conjoint choice experiment.

Why Choose the Conjoint Choice Experiment (CCE) with Latent Class Analysis?

Since the early 1970's, conjoint analysis has received considerable academic and industry attention as a powerful technique to measure and understand buyer preferences for consumer products (Green and Rao 1971; Johnson 1974; Srinivasan and Shocker 1973b; Wittink and Cattin 1989). Usually a marketable product has multiple attributes and when consumers are asked their preferences, it can be difficult to state their trade-offs and relative importance for each of the product attribute. Also, it is said that product attributes in isolation are perceived differently than in combination which is how normally products are available in the market.

Although there are different methods that can help determine which attributes will have the biggest impact in customer satisfaction or how customer satisfaction will be affected by changing a product attribute, there are limitations to these approaches. The advantage of using conjoint analysis method over other methods is that the former is a decompositional model, where products are decomposed into different attributes with different levels and consumer preferences for the products measured by the partial contribution ("partworth") of product features (Hauser and Rao 2004). Later, in the 1980s, conjoint analysis was improved to choice based experiments known as conjoint choice experiment (CCE) (Louviere and Woodworth, 1983).

The main advantage of using CCE over conventional conjoint analysis as pointed out by Louviere 1988; Elrod et al. 1992; DeSarbo, Ramaswamy and Cohen 1995; Cohen 1997; Chran and Orme 2000; and, Haaijer 1999) is that in the conventional approach, a set of profiles is presented to the respondent, while in the choice approach several sets of profiles with each divided into several choice sets is presented and respondent have to choose their most preferred

alternative from each choice set. This is far less tedious compared to conventional conjoint approaches.

The profiles are designed in such a way that it mimics the changes in the environment based on which trade off can be measured through the respondents weight in choosing one attribute over another. The CCE and analysis comprises of six design stages (Cattin and Wittink 1982; Green and Wind 1975; Louviere and Woodworth 1983; Hanley , Mourato and Wright 2001; Halbrendt et al. 1991; Chan-Halbrendt et al. 2007) and involves surveys for hypothetical or real products with different attributes or characteristics. The potential impact from changing these attributes is that it might impact purchasing decisions. Once the attributes have been identified, the outputs of CCE indicate which attributes are significant determinants of the values people place when purchasing a product the relative importance of key attributes of the product and market simulation.. This is the other advantage of using CCE.

While CCE is useful in capturing the consumers' preferences for the observable attributes of the products and its relative importance, it is also important to understand that these preferences are influenced by the unobservable factors as well which are basically the heterogeneity of individual behavior defined by their socio-demographic background.

Conjoint choice method using latent class analysis (LCA) provides additional information on the traditional aggregated or one class model. The standard aggregate model can be affected due to violations of the independence of irrelevant alternatives (IIA) problem, which distorts the predictions of market niches. With latent classes, the different segments that have different utility preferences are accounted for, (and IIA holds true within each segment), which is a way of resolving this problem and improving niche market predictions (Vermunt and Magidson 2005). Thus, CCE with LCA is more powerful as it evaluates respondent choice behavior by capturing both observable attributes of choice and unobservable factors found in the heterogeneity of individual's behavior (Greene and Hensher 2003; Milon and Scrogin 2006). In other words, respondents are placed into distinct classes (groups) based on their choices when answering the conjoint choice experiment questions. In LCA studies, the probability of making a specific choice is based on the perceived value of product attributes and covariates of respondents (such as respondent's age and income) (McFadden 1973). This method therefore helps in identifying specific niche market segments based on the "distinct classes" the respondents fall into and design appropriate marketing strategies based on the preferences of the "distinct classes". Considering these advantages, Conjoint Choice Experiment (CCE) with Latent Class Analysis (LCA) was used for evaluating Indian consumer preferences for Kona coffee. The most important coffee attributes were chosen based on previous studies and in consultation with Kona coffee experts in order to make more accurate niche market predictions for Kona coffee in South India.

Method

In this study, we used Conjoint Choice Experiment (CCE) to find South Indian consumer's preferences for specialty imported Kona coffee. The following paragraphs describe how the CCE was designed and the data analyzed. This study was conducted through a survey of Bangalore residents (the city of Bangalore has approximate population of five million) using a conjoint choice experiment method. A conjoint choice experiment approach directly asks for respondents' preferences based on a set of structured survey questions. The approach measures the value of

the most important coffee attributes by asking about different market scenarios based on the product characteristics or attributes. In conjoint choice experiment models respondents typically are asked to evaluate two profiles from each choice set. Respondents are then required to pick the profile that they would most prefer from that set.

There are six stages of a CCE design and analysis (Cattin and Wittink 1982; Green and Wind 1975; Louviere and Woodworth 1983; Hanley et al. 2001; Halbrendt et al. 1991; Chan-Halbrendt et al. 2007).

First and Second Design Stage

Finding Product Attributes and their Levels

The first and second stage of CCE design comprised of finding the product attributes and their levels respectively. This is done through an extensive literature survey and consultation with experts. The levels should be realistic, practically achievable, and span the range over which we expect respondents to have preferences. In order to come up with the important attributes and the corresponding levels which consumers will consider when purchasing specialty coffee, experts in the field were consulted along with literature review. Based on expert opinions as well as previous studies by Tseng (1991), Su and You (1999), Lu and Hung (2000), Pelsmacker et al.(2005) and Shih et al. (2008). Four important attributes were selected for this study - Price, Grind Preferences, Taste and Place of Origin. Each of these attributes had varying levels (see Table 1). Price had three levels— U.S. \$ 60, \$75, \$90 per gift box of 500 gms. This is based on the estimated cost of imported specialty coffees) which falls in the range of \$60 (2900 INR) to \$90 (4400 INR) for 500 gms. Grind Preferences had three levels— Fine Grind, Ground Regular, and Whole Bean. Taste had three levels- Light, Medium, and Strong and; Place of Origin had four levels- Kona Coffee, South American Coffee, South-East Asian Coffee and African Coffee (See Table 1).

Table 1. Coffee Attributes and Their Levels

Attributes	Levels			
Price	\$ 60/ 500gms	\$75/ 500gms	\$90/500gms	
Grind Preference	Whole Bean	Ground Regular	Fine Ground	
Taste	Light	Medium	Strong	
Place of Origin	Kona, U.S.A.	S.E. Asian	South America	African

Third and Fourth Design Stage

Choice of Experimental Design and Construction of Choice Sets

The third and fourth stages of designing the CCE involve choice of experimental design and construction of interview questions (or construction of choice sets or product profiles) to be presented to survey respondents. Statistical design theory is used to combine the levels of the attributes into a number of alternative product profiles to be presented to respondents. Depending on how many choice sets and/or profiles are included in the experiment, one can have either a complete or fractional factorial design. Product profiles are constructed by selecting one level from each attribute and combining across all attributes. In this study, there are four attributes, of which Place of Origin has four levels and the rest have three levels each, bringing the total

number of profiles to 108 (i.e. $4 \times 3 \times 3 \times 3$). Based on a complete factorial design, all 108 profiles would have to be presented to the respondents, which could be tedious and difficult. Therefore, a fractional factorial design was utilized where a sample of the design is selected from the full factorial design. Using this approach minimizes loss of information and also efficiently tests the main effects of the attributes on respondent’s preference (Chan-Halbrendt et al. 2007). The most commonly used method of constructing fractional factorial design in conjoint measurement is the orthogonal array. Orthogonal arrays build on Graeco-Latin squares by developing highly fractionated designs in which the scenario profiles are selected so that the independent contributions of all main effects are balanced, assuming negligible interactions (Green and Wind 1975). From all possible profiles, pairs of profiles were randomly developed and separated into seven versions with 12 pairs each using software developed by Sawtooth Software, Inc. Having only 12 pairs per respondent to evaluate from ensures that the duration of the surveying exercise does not adversely impact a respondent’s responses.

For data collection, all seven versions were administered in approximately equal proportion (i.e. each set to about 30 of the 200 respondents). Respondents were then presented with one set of 12 pairs of profiles from which to make their choices. The experiment requires respondents to choose one product profile from each pair. Table 2 shows an example of a pair of product profile scenarios from which the respondents chose.

Table 2. Example of a pair of product profile scenarios

<i>If these were your product options, which would you choose?</i>		
Attribute	Profile A	Profile B
Price	\$60 / 500gms	\$90 /500gms
Grind Preference	Whole Bean	Ground Regular
Taste	Light	Strong
Place of Origin	Kona, U.S.A.	South America

Fifth Design Stage

Data Collection- Survey Location, Sample Size and Survey Technique

A face-to-face survey was conducted to ascertain consumer awareness and preferences for imported specialty Kona coffee. Bangalore, Karnataka was chosen as the representative study site for South India based on meetings with the local coffee experts and professionals working at the U.S. Foreign Agricultural Service, Office of Agriculture Attaché, New Dehli, India. Also, the Coffee Board of India’s head office is located in Bangalore. Bangalore also has the largest number of coffee outlets and is one of the highest coffee consuming urban cities in South India. 200 surveys were collected, mainly focusing on high-income professionals in Bangalore as they match the profile of the consumers who are representative of the changing coffee trends based on expert opinions and previous studies (Business Line Report, The Hindu, 2009; Bharadwaj 2006; Coffee Consumption Study in India, 2008). The sample size was based on the Sawtooth Software recommendation for such a study (i.e. Conjoint Choice Experiment) where a sample size ranging from 150 to 1,200 respondents is recommended (Orme 2006).The following formula was also used to validate the sample size for the latent class analysis (Johnson and Orme 2003).

$$(1) \quad nta / c \geq 500$$

Where n is the number of respondents, t is number of tasks per respondent, a is the profiles per task, and c is the maximum number of attribute levels.

Since the product is imported high-end specialty coffee, we were targeting high-income professionals and data was collected from the following locations: outlets of India's biggest coffee retail chain- Café Coffee Day; a multinational company; two international banks; and a five-star hotel. The surveying was accomplished over 7 days in the last week of May, 2009. The response rate was 86%.

The survey questionnaire consisted of two sections. Section one was comprised of 12 pairs of specialty coffee profiles from which respondents choose. Section two consisted of questions regarding the socio-demographic and economic background of the respondents such as age, income, education and other characteristics. Section one data provided the attribute-specific preferences. The data was analyzed using latent class analysis software Latent Gold Choice, Version 4.0 developed by Statistical Innovations Inc. To establish a minimal level of knowledge on the issue prior to completing the survey, a brief description of the study was explained to respondents regardless of their knowledge of the topic. Then, each respondent was shown 12 pairs of product profiles with differing levels of attributes and asked to select one from each pair. Section two provided the socio-demographic profile of the respondents which was used to confirm if the respondent profiles were consistent with the target population of key coffee drinkers in Bangalore as identified by the Coffee Board of India survey.

Sixth Design Stage

Data Analysis: Conjoint Choice Model Using Latent Class Analysis (LCA) Approach

This is the final stage of a CCE. As discussed in the literature review, conjoint choice method using latent class analysis is an improvement on the traditional aggregated or one class model. In latent class analysis, the different segments that have different utility preferences are accounted for, (and IIA holds true within each segment), and by this better market predictions can be made.

The model used in this study is a conditional logit model where, the probability (P_{ni}) that individual n chooses profile i can be represented by the following equation (2) (McFadden 1973).

$$(2) \quad P_{ni} = \frac{\exp(\eta X_{ni})}{\sum_{h=1}^I \exp(\eta X_{nh})}$$

Where η denotes a scale parameter, usually normalized as 1.0. X_{ni} is the deterministic component that is assumed to be a linear function of explanatory variables. Equation (2) can be represented as equation (3) for LCA:

$$(3) \quad P_{ni} = \frac{\exp(\eta \beta Z_{ni})}{\sum_{h=1}^I \exp(\eta \beta Z_{nh})}$$

Where Z_{ni} are explanatory variables of X_{ni} , including a profile-specific constant, product attribute of profile i , and socio-demographic factors of respondent n . β is a vector of estimated parameter coefficients.

In a latent class analysis, respondents are sorted into M classes (groups) in terms of individuals' choice of observable product attributes, and the unobservable heterogeneity among the respondents. The value of estimated parameter coefficient β is different from class to class because this parameter coefficient is expected to capture the unobservable heterogeneity among individuals (Greene and Hensher 2003). Then, the choice probability of individual n belong to class m ($m = 1, \dots, M$) can be expressed as equation (4):

$$(4) \quad P_{ni | m} = \frac{\exp(\eta_m \beta_m Z_{ni})}{\sum_{h=1}^I \exp(\eta_m \beta_m Z_{nh})}$$

Where η_m is the class-specific scale parameter and β_m is the class-specific estimated utility parameter.

The first step of the latent class analysis was to determine the optimal number of distinct classes for the dataset. Using the Bayesian Information Criterion (lowest BIC value for best results), which was first proposed by Schwartz (1978), a three-class model for this study was decided as it was the class with the lowest BIC value.

Therefore, in summary, the probability for individual n in class m choosing control program i , $P(i)$, is measured by two types of characteristics: (1) product attributes, including grind preference (G), Taste (Tt), Place of Origin (O), and price (C); and (2) individual socio-demographic factors, including gender (GE), age (A), education (E), income (I), and household size (H). The preference model is specified in equation (5).

- (5) $P(i) = f(G, Tt, O, C, GE, A, E, I, H)$
 $P(i)$ = Probability of choosing product profile A vs. B;
 C = Price of imported coffee- U.S. \$60, \$75 and \$ 90/500 gms;
 G= Grind Preference -Whole Bean, Ground regular and Fine ground;
 Tt = Taste - Light, Medium and Strong;
 O= Place of Origin of Imported Coffee- Kona/Hawaii, South East Asia, South America and Africa;
 A= Age18 and above;
 GE= Gender- Male or Female;
 I= Household income group (U.S. \$/month)- < \$1001; \$1001-1500; \$1501-2000; \$ 2001-2500; > \$ 2500;
 E= Educational Background- High School, Higher Secondary (11th and 12th grade), Undergraduate, Post-Graduate, Others;
 H= Household Size- Number of people in the household;

Results

Sample Population Profile and Product Awareness

The socio-demographic profile of the respondents indicated the average age of the respondents was 31 years with the majority (67%) holding a postgraduate degree. 43% of the respondents belonged to the higher monthly income category of INR 110,000 (U.S. \$ 2500) and above. The gender distribution among the respondents was fairly equal with 55% males and 45% female. According to Bidisha Nagaraj, president of marketing at Cafe Coffee Day, India's largest retail cafe chain, "modern coffee shops are positioned as a social hub and aimed at consumers who are young and young at heart". And so, coffee chains are aggressively targeting young, urbanized Indians between the age groups of 15-35 who are brand conscious and can afford to splurge on high-priced lattes and espressos (AFP Asian Edition, June 2009). Clearly the respondent profiles are consistent with the profile of the major coffee consumers in the city as indicated by reports (Coffee Consumption in India, 2008).

According to the survey, not surprisingly, the majority of consumers are aware of Indian origin coffee (91%) followed by 47% are aware of South American Coffee, 42% aware of South East Asian Coffee, 37% are aware of African coffee and only 20% are aware of Hawaiian Kona Coffee. The comparative lack of knowledge of Hawaiian Kona Coffee is expected considering the almost non-existent export marketing campaigns by Kona Coffee growers in these regions. South American and South East Asian brands are available at leading Coffee outlets such as Café Day, particularly through their new café concept of high-end Café Day Squares thus explaining awareness regarding these brands. In terms of purchasing coffee from the main coffee producing regions, the majority have purchased coffee from India, which is again expected. As far as imported specialty coffee is concerned the majority have purchased South American (39%) coffee, closely followed by South East Asian Coffee (34%) with only 2% of respondents having purchased Kona Coffee.

Kona coffee is a high end consumer product. It is also currently being exported and marketed to countries such as Japan, as a high-end niche market product and high-end gifts. Also, as mentioned earlier, increase in the availability of disposable income is an indication of improved economic conditions of a region which in turn influences the demand for high-end products. Considering this, it was important to explore the respondents' spending behavior such as- their awareness on the price of specialty imported coffee, their willingness to pay for high-end Kona coffee and the average spending on gifts the previous year. Results indicated that the average amount spent on gift was approximately \$345 annually. This is an indication of the average disposable income that the respondents have available to spend on gifts. On the other hand, their willingness to pay for a box of imported specialty coffee was only about \$19 much less than the actual cost of importing. This can be attributed to the lack of awareness of imported specialty Kona coffee among the target population sample. On average it was estimated that the total cost of imported Hawaiian Kona Coffee, including import taxes is somewhere in the range of \$60 to \$90 for 500 gms. This is much more than their indicated willingness to pay but within their average gift expenditure. This is key information from a niche marketing perspective. Being a culturally diverse place and the number of festivals celebrated annually, there is ample opportunity for purchasing high end gifts. However, to explore the potential for niche market for high-end Kona coffee, a detailed understanding of the respondent's preferences of imported

specialty Kona coffee, their willingness to pay as well as their product attribute preferences and knowledge is needed. Conjoint Choice Experiments (CCE) with Latent Class Analysis (LCA) was used to gather these information and the results are discussed in the following section.

Latent Class Analysis: Results

Table 3 shows the results of the latent class analysis with the estimated parameters, the nature of the relationship between the dependent and independent variables and their significance levels for each class. The model is specified as probability of choosing a particular product profile as a function of coffee attributes with different attribute levels. Three class models was the best fit for the data set based on the BIC criterion (lowest BIC value).

Table 3. Results of the Latent Class Analysis with the Estimated Parameters by z-values

	Class1	z-value	Class2	z-value	Class3	z-value
Class Size	60%		25%		15%	
Attributes						
Price/500gms	-0.66**	-4.37	-0.68*	-2.07	-0.09	-0.12
Grind Preference						
Fine Ground	0.11*	1.95	0.10	0.95	0.24	0.77
Ground Regular	-0.07	-1.34	0.28*	2.58	-0.02	-0.08
Whole Bean	-0.03	-0.58	-0.39**	-3.19	-0.21	-0.67
Taste						
Light	-0.34**	-4.76	0.68**	4.97	-3.18**	-5.35
Medium	0.04	0.69	0.45**	4.45	0.36	1.32
Strong	0.30**	3.82	-1.13**	-6.41	2.82**	5.59
Origin						
Africa	-0.31**	-4.35	-0.15	-1.04	0.31	0.67
Kona	0.19*	2.83	0.14	1.05	0.02	0.05
South America	-0.03	-0.44	0.04	0.32	-0.00	-0.01
South East Asia	0.14*	2.07	-0.03	-0.23	-0.33	-0.83
Intercept	Class1	z-value	Class2	z-value	Class3	z-value
* $p < .1$ and ** $p < .05$	0.74	5.21	-0.12	-0.66	-0.62	-3.65

Class 1 respondents prefer to buy coffee from Kona and South East Asia that are strong tasting and fine ground and not African. The price parameter is negative such that their demand decreases as price increases. These signs are expected and significant at the <0.05 level. Class 2 respondents prefer coffee that is ground regular, not whole bean and more light than medium in taste, but not strong. Their demand decreases as price increases. Place of origin is not important. Again, the signs are expected and they are all significant at the <0.05 level. Of particular interest, price has the expected significant negative correlation in this class. For Class 3, only taste is statistically significant with a preference for strong coffee and respondents do not like light coffee at all. These parameters are all significant at the <0.05 level. The majority of the respondents, 60%, belong to Class 1, followed by Class 2 (25%) and Class 3 (15%) (See Table 3).

An important aspect that also needs to be considered is the relative importance and magnitude of each attribute by class places on the key attributes. This is important from a marketing

perspective as the product can be made available to the consumers incorporating and highlighting the most preferred attribute, thereby leading to customer satisfaction. The results indicate (Table 4) that Class 1, to which the majority of the respondents belong, consider taste as the most important factor, followed by place of origin, then price and finally grind. Class 2 also considers taste as the most important factor, followed by grind, then price and finally place of origin. Class 3 considers taste as the most important factor, followed by place of origin, grind preference and price is least important to them.

Table 4. Relative Importance of Attributes by Three Classes of Respondents

Relative Importance	Class 1	Class 2	Class 3
Price/500gms	25%	14%	1%
Grind Preference	9%	20%	6%
Taste	37%	56%	84%
Origin	29%	10%	9%

As mentioned earlier a latent class approach is a more appropriate estimation tool when dealing with people of generally heterogeneous backgrounds such as different income levels, gender and other socio-demographic variables. The Latent Class approach helps not only in identifying niche groups with their specific product preferences within the sample population but also identify the type of population on the basis of their socio-economic characteristics. In the case of this study, the respondents were fairly homogenous in terms of socio-demographic variables such as age, education, income and employment as these groups were specifically targeted for the study. As a result, none of the socio-demographic variables showed significance in the latent class analysis and, therefore, differences among consumers based on socio-demographics, for each of three classes, could not be found.

Conclusions and Marketing Implications

The main goal of this study is to enhance the economic viability of small Kona coffee growers' income through exporting to emerging markets such as India. The overall objective of the study was to explore consumer preferences for imported, specialty, high-end Kona coffee in South India. Based on previous studies and local Kona coffee experts, four key product attributes with different levels were chosen to explore consumer preferences for Kona coffee among South Indian respondents. These attributes include—Price, Taste, Grind Preference and Place of Origin. Majority of the respondents (60%) belong to Class 1 and they show a preference for Kona Coffee along with coffee from South East Asia. A significant importance is placed on taste with a preference for strong coffee. In other words there is a preference for dark roasted coffee (for strong taste) as indicated by respondents in both class I and class III. There is also a segment of respondents (class II) who has preference for light than medium roasted coffee. The bottom line is taste is an important factor and marketing strategies that target consumers with different tastes is suggested. Results also indicate specific ground preferences for coffee, mainly fine ground and regular ground but not whole beans. Therefore, it is imperative to launch the product, highlighting these preferences.

The relative importance of price is not as high as taste but the result indicates it as a negatively significant attribute which means that the willingness to buy decreases with increasing price. This information is valuable from a marketing perspective and it can be inferred that India offers an export market potential for Kona coffee, provided it is offered at competitive prices. Besides Kona coffee, there is also a preference for coffee from South East Asia among majority of respondents. Currently the biggest coffee imports to India are from South East Asia, primarily Indonesia with approximately 15,000 million tons imported in 2007-2008. This coffee is readily available with greater market visibility and at cheaper prices. The cost is almost three times less than coffee from USA (Coffee Consumption in India, 2008). Also, recent reports state that competition, notably from Vietnam is likely to rise in the wake of the recently signed Free Trade Agreement (FTA) between India and the Association of South East Asian Nations (ASEAN) (August 13th 2008, Indian Express News Report). This means that in order to increase demand for Kona coffee in India, it must be competitive compared to South-East Asian coffee in terms of taste and price.

As discussed in a study on Instant coffee in Taiwan, the price needs to remain flexible until the consumers' perception regarding the product matches with the suggested price (Shih et al. 2008), which may be possible only through rigorous marketing campaigns. There is also the danger of a very high price obscuring the true quality of the product and its purchasability (Wall et al. 1991) and therefore appropriate pricing is something that needs to be strongly considered. Under the circumstances, one possibility is to use high quality Kona coffee blends (more than the current 10% Kona coffee blends available in the U.S. markets) with the preferred taste and grind preferences, offered at competitive prices. However, the acceptability of this arrangement by Kona farmers needs to be explored. According to the Hawaii State Legislature, "existing labeling requirements for Kona coffee causes consumer fraud and confusion and degrades the 'Kona coffee' name" (Senate Concurrent Resolution No. 102, 2007). In fact, a recent study on the economic impact of blending shows that while the Kona farmers received an estimated \$1.4 million from the sale of "prime grade" Kona coffee to the blenders, the blenders made a profit of \$14.4 million through the sale of coffee containing only 10% Kona Coffee. This is because the buyers are "deceived" by the "Kona Coffee" label. This also in turn impacts the consumers' willingness to pay a premium price for 100% Kona coffee which lowers as it is not well differentiated from the non-specialty coffee (Feldman, 2010; Aaker and Killer 1990). In fact, the Hawaii coffee growers association is demanding the State to protect the economic interest of its coffee farmers by protecting the "Kona Coffee" brand (Feldman, 2010).

Also, it is important that exporters be aware of import regulations and shipping options in India. Currently there is a 100% import tax on coffee, which will create additional costs to selling the product in India, further driving up its price. Under the circumstances, competing with South Asian coffees in terms of price can be challenging. Therefore, unless alternative marketing approaches are considered, pure Kona coffee will remain a high-end specialty product and not price competitive with lower quality South East Asian coffee.

An alternative approach for marketing 100% Kona coffee could be through creating niche markets for Kona Coffee as exclusive high-end gifts. This study's survey indicated that on an average the respondents spent U.S. \$354 on gifts in 2008. This basically gives an indication of the average disposable income that the respondents are willing to spend on gifts. The study results also indicated that there is a section of the population (about 15%) who are indifferent

about prices. Their choice is purely driven by taste, preferably strong taste. This offers an opportunity to tap into this niche market segment for 100% pure Kona coffee. With the rate at which the coffee industry is expanding in India and the change in the coffee consumption trends along with a rich and expanding middle class, this region cannot be disregarded as a potential market for Kona. Marketing of Kona Coffee as exclusive high-end gifts might offer some opportunities for Kona Coffee to enter into the Indian markets. Culturally, with the number of festivals celebrated in India, gift giving is an important aspect of any festival or other family events such as marriages and anniversaries. The advantage of selling it as gifts is the exemption from import taxes, which can bring down the cost as well. In this context, it is also important to note that cultural preferences must be considered for packaging in terms of color and pattern. For instance, culturally, certain colors are considered auspicious for occasions such as festivals and family functions. But colors such as black or white are not and these cultural nuances must be taken into account for gifting option.

Recent reports also indicate large expansions by some of the biggest café chains in India such as Café Coffee Day. Café Coffee Day with its recent concept of Café Coffee Day Square is offering many international brands on its menu, although at present Kona coffee is not one among them. Besides Café Coffee Day, there are also increasing expansions by other competitors. According to Mr. Vishal Kapoor, head of marketing and product development at Barista, a Netherlands based company with a large number of café chains in India, “the sector shows no signs of saturation or slowing demand” (AFP Asian Edition, 2009). Also, five star hotels such as the Taj group of hotels is already featuring high priced Kona coffee in their menu. But, according to Mr. Vinod Pandey, the Food and Beverage Manager of Taj West End in Bangalore, awareness on Kona coffee is very minimal and hence not frequently in demand in their cafes or restaurants. According to Mr. Pandey, the product should be made more visible with more emphasis placed on its uniqueness, limited production and high quality.

Under the above mentioned circumstances, it becomes imperative that measures be taken to assist local Kona farmers in creating business linkages with the Indian market. More visibility for Kona coffee is also essential to improve awareness among coffee consumers. Steps must be taken to launch the product in the Indian market through possible collaborations with café chains like Café Day. The majority of the population that frequents these cafes is high-income, highly educated professionals with an average age of 31 years. Marketing campaigns must cater to this population for both blended and 100% pure Kona coffee. Partnering with high-end restaurants and five-star hotels such as the Taj Hotel is also recommended. Keeping in mind the limited production and exclusivity of Kona coffee, efforts need to be made to launch and market it as a specialty, high-end product. Results clearly indicate that taste is a very important attribute and opportunities need to be created for South Indian consumers to experience the taste of Kona coffee.

Furthermore, policy level and other support must be provided to local Kona coffee growers in order to expand their export market and bring in the much-needed revenue to both the farmers and the State of Hawai'i. To begin with, support should be extended to the local coffee farmers to protect the Hawaiian grown identity as well as the “100% Kona Coffee” trade mark. The well functioning Kona Coffee Cooperative in Hawaii, in collaboration with the Department of Agriculture and with the support of the University of Hawaii's extension services have a key role

in assisting farmers to establish business linkages with potential markets in Bangalore and South India. Representation of Kona coffee growers at the Indian International Coffee Festival, 2009 can be considered an important initial step towards establishing these linkages. Educating farmers on maintaining the high quality of Kona coffee by making appropriate farming, harvesting and packaging decisions, disseminating useful information on potential export markets such as India and the associated rules and regulations is important. And last but not the least providing assistance to launch the product in emerging markets such as India and expanding awareness on the product among potential consumers and buyers are some of the strategic steps to be undertaken. Increasing the visibility of the product, the value of its trademark and significance of the place of origin are all key aspects that need to be seriously considered.

The reputation of the quality of a country's product varies based on the product type and consumers are more willing to buy the product from the country perceived to have a good reputation for a specific product. Therefore the key is to initiate efforts to increase the visibility of specialty 100% pure Kona coffee and educate consumers on the significance of its quality, exclusivity, aroma and taste, thereby strengthening the "fit between the product category and country image" (Ahmed et al. 2004; Roth and Romea 1992). Increased familiarity, along with promoting the reputation, prestige and favorable image Kona coffee represents in the international market, will increase the chances of a successful market entry and also increase the willingness to pay. Overall, an emphasis should be placed on strengthening the brand image of the product in South India. Clearly there is niche market potential for Kona coffee in South India, and rigorous marketing campaigns along with establishing strategic alliances with the host country businesses are the key to potential import success for Kona Coffee as a high-end specialty product.

Acknowledgements

The authors wish to thank Mr. Ken Love, President, Hawaii Tropical Fruit Growers and former treasurer and board member of the Kona Pacific Farmers Cooperative, Ms. Jacqueline Halbrendt, Graduate Student, Horticulture, University of Puerto Rico, Mayagüez Campus and Ms. Gwendalyn K. Sisior, Graduate Student, NREM, University of Hawaii at Manoa for their help and support in data collection and data input for this study. This study was possible through funding by USDA-Emerging Markets Grant, and Department of Natural Resources and Environmental Management, University of Hawaii at Manoa.

References

- Aaker, D.P.A. and K.L. Keller. 1990. Consumer Evaluations of Brand Extensions, *Journal of Marketing*, 54(1): 27-41.
- AFP Asian Edition. June 2009, Retail chains leave India's coffee houses in peril(accessed December 2009) <http://www.thefreelibrary.com/>
- Ahmed, Z. U., J. P.Johnson, X.Yang, and K. F.Chen. 2004. Does Country of Origin Matter for Low-Involvement Products? *International Marketing Review*. 21:102.

- Bhardwaj, P. 2006. India develops a taste for coffee (accessed December 2008)
http://www.atimes.com/atimes/South_Asia/HE12Df04.html
- Business Line Report. 2009. Arabica coffee imports likely in next 7-8 years. The Hindu (accessed December 2009).
<http://www.thehindubusinessline.com/2009/08/14/stories/2009081450871600.htm>
- Cattin, P. and D.R.Wittink. 1982. Commercial Use of Conjoint Analysis. *Journal of Marketing* 46(Summer):44-53.
- Cohen, S.H. 1997. "Perfect Union: CBCA Marries the Best of Conjoint and Discrete Choice Models," *Marketing Research* 9(1):12-17.
- Chan-Halbrendt, C., F.Yang, L.Thomas, and A. Pant. 2007. Analysis of Farming Household's Preferences on Invasive Species Management: The Case of Miconia. *International Food and Agribusiness Management Review*. 10(2):117-140.
- Chran,K. and B. Orme. 2000. An Overview and Comparison of Design Strategies for Choice-Based Conjoint Analysis, Research Paper Series, Sawtooth Software, Inc (accessed on June 2010). <http://www.sawtoothsoftware.com/download/techpap/desgncbc.pdf>
- Chung, K.K. and Y.C.Jay.1997. Brand popularity, country image and market share. *Journal of International Business Studies* 28: 361-86.
- Coffee Consumption in India on the Rise. 2005. Tea &Coffee Trade Journal, Coffee Board of India.[accessed December 2008] <http://www.allbusiness.com/manufacturing/food-manufacturing-food-coffee-tea/408540-1.html>
- Coffee Consumption in India. 2008. *Economic & Market Intelligence Unit*, Coffee Board, Bangalore. Coffee Board of India Publication, No. 1 Ambedkar Veedhi, Bangalore-560001. INDIA <http://www.indiacoffee.org/publications/consumption2008.html>
- Cranfield, J., S. Hensen, J. Northey and O. Masakure. 2010. An Assessment of Consumer Preference for Fair Trade Coffee in Toronto and Vancouver. *Agribusiness*, 26(2): 307-325.
- Cristovam, E., C. Russell, A. Paterson, and E. Reid. 2000. Gender Preference in Hedonic Rations for Espresso and Espresso-milk Coffees. *Food Quality and Preference* 11(6):437-444.
- DeSarbo, W.S., V. Ramaswamy, and S.H. Cohen. 1995. "Market Segmentation with Choice-Based Conjoint Analysis," *Marketing Letters* 6(2): 137-148.
- Elrod, T., J.J. Louviere and K.S. Davey. 1992. "An Empirical Comparison of Rating-Based and Choice-Based Conjoint Models," *Journal of Marketing Research*, 29(3), 368-377.

- Feldman, M.2010. Kona coffee blends take profits from growers, Resource Decisions.
<http://konacoffeefarmers.org/Economic%20Efforts%20of%20Blending%20Kona.pdf>
- Fleming, K., and S. Nakamoto. 2003. "Kona Coffee for the Japanese Market," Western Profiles of Innovative Agricultural Marketing: Examples from Direct Farm Marketing and Agri-Tourism Enterprises. Western Extension Marketing Committee.
- FTA with ASEAN, August 13th. 2008. Indian Express News Report, (accessed November 2009). <http://www.indianexpress.com/news/fta-with-asean/501716/>
- Greene, W.H. and D.A. Hensher. 2003. A latent class model for discrete choice analysis: contracts with mixed logit. *Transportation Research Part B: Methodological* 37(8): 681-698.
- Green, P.E. and V. R. Rao. 1971. Conjoint Measurement for Quantifying Judgmental Data. *Journal of Marketing Research*, 8: 355-63.
- Green, P.E. and Y. Wind. 1975. New Ways to Measure Consumers' Judgments. *Harvard Business Review*: 89-108.
- Green, P. E. and V.Srinivasan. 1978. Conjoint Analysis in Consumer Research: Issues and Outlook. *Journal of Consumer Research* 5:103-123.
- Haaijer, M., 1999. Modeling conjoint choice experiments with the probit model. Ph.D. Thesis, University of Groningen, Labyrinth Publications, The Netherlands [accessed June 2010]. <http://dissertations.ub.rug.nl/faculties/eco/1999/m.e.haaijer/?pLanguage=en>
- Halbrendt, C., C. Gempeasaw II, J. R. Bacon and L. Sterling. 1991. Public Perception of Food Safety in Animal-Food Products. *Journal of Agribusiness*. 9(1):85-96.
- Hanley, N., S. Mourato, and R.E. Wright. 2001. Choice Modelling Approaches: A Superior Alternative for Environmental Valuation? *Journal of Economic Surveys* 15(3): 435-462.
- Hawaii Department of Agriculture, 2009. "Report on Hawaii-Grown Coffee Labeling & Inspection and Economic Impact of Potential Changes to Minimum Content Requirements", (accessed October 2010).
http://hawaii.gov/hdoa/meetings_reports/legislative-reports/2009legreports/Coffee%20Report.PDF
- Heidema, J. and S.de Jong. 1998. Consumer Preferences of Coffees in Relation to Sensory Parameters as Studied by Analysis of Covariance. *Food Quality and Preference* 9(3):115-118.
- Hauser, R.J., and V. Rao. 2004. Conjoint Analysis, Related Modeling and Applications. *Market Research and Modeling: Progress and Prospects, A Tribute to Paul E. Green*. Eds.Yoram j. Wind and Paul E. Green, Kluwer Academic Publishers, Massachusetts.

- India-US Trade, Embassy of India, Washington DC. 2008. (accessed December 2009) Available from <http://indianembassy.org/newsite/indoustrade1.asp>; (accessed May 2010).
- Instant Hawaii. (accessed December 2008). <http://www.instanthawaii.com/cgi-bin/hawaii?Plants.coffee>.
- Johnson, R. M. 1974. Trade-off Analysis of Consumer Values, *Journal of Marketing Research*, 11: 121-7.
- Johnson, R. and B.Orme.2003. Getting the most from CBC. Sawtooth Software Research Paper Series. (accessed January 2010). <http://www.sawtoothsoftware.com/education/techpap.shtml>.
- Louviere, Jordan J. and G.Woodworth. 1983. "Design and Analysis of Simulated Consumer Choice or Allocation Experiments: An Approach Based on Aggregate Data," *Journal of Marketing Research*, 20 (November): 350-67.
- Louviere, J.J. 1988. "Conjoint Analysis Modeling of Stated Preferences. A Review of Theory, Methods, Recent Developments and External Validity," *Journal of Transport Economics and Policy*, January: 93-119.
- Lu, C., and W. C. Hung. 2000. Young consumers' preference for canned coffee. In *Proceedings of Symposium of Science. Technology and Management* 321-327.
- McFadden, D.S. 1973. Conditional Logit Analysis of Qualitative Choice Behavior, In *Frontiers in Econometrics*, Edited by Zarembka P. Academic Press, New York, NY.
- Milon, J.W., and D. Scrogin. 2006. Latent preferences and valuation of wetland ecosystem restoration. *Ecological Economics* 56(2): 162-175.
- Orme, B. K. 2006. Getting Started with Conjoint Analysis: Strategies for Product Design and Pricing Research, Research Publishers LLC, Madison, U.S.A.
- Pelsmacker, P. D., L.Driesen, and G.Rayp. 2005. Do Consumers Care about Ethics? Willingness to Pay for Fair-Trade Coffee. *The Journal of Consumer Affairs* 39: 363-385.
- Rdahakrishnan,S. and B.D.R. Reddy. 2007. Attitude towards coffee drinking by coffee consumers and non-consumers in India. (accessed April 2008). <http://www.indiacoffee.org/newsletter/2007/april/cover-story-1.html>.
- Roth, M.S., and J.B.Romea. 1992. Matching product and country image perceptions: a framework for managing country-of-origin effects. *Journal of International Business Studies* 23(3): 477-497.
- Schwarz, G.1978. Estimating the dimension of a model. *Annals of Statistics* 6:461-464.

- Shih, M.L., C.Y. Liu, B.W. Huang, S. Lin, and K.C. Peng. 2008. Conjoint Analysis: A Study of Canned Coffee in Taiwan. *International Journal of Computer Science and Network Security*. 8(8): 238-246.
- Southichack, K.M. 2004. Market Outlook Report- Hawaii Coffee Industry, Agriculture Development Davison, Hawaii Department of Agriculture.
- Srinivasan, V., and A.D. Shocker. 1973b. 'Estimating the Weights for Multiple Attributes in a Composite Criterion Using Pair wise Judgments. *Psychometrika* 38: 473-93.
- Su, C. Y., and C.W. You. 1999. A study of purchasing behaviors of college students over brandname products in Metro-Taipei—a case study of Unipresident's La gauche de la Seine coffee. *Journal of Printing Art* 11:134-157.
- Tseng, R. H. 1991. Canned Coffees. *Logistic World Magazine* 1: 32-34.
- USDA Economic Research Service, (accessed May 2010).
<http://www.ers.usda.gov/briefing/India/trade.htm>
- Vermunt, J.K., and J. Magidson. 2005. *Technical Guide for Latent GOLD 4.0: Basic and Advanced*. Statistical Innovations Inc. Belmont, Massachusetts.
- Wall, M., J. Liefeld, and L.A. Heslop. 1991. Impact of country-of-origin cues on consumer judgments in multi-cue situations: a covariance analysis. *Journal of the Academy of Marketing Science* 19(2): 105-13.
- Wittink, Dick R., and P. Cattin. 1989. Commercial Use of Conjoint Analysis: An Update. *Journal of Marketing* 53(July): 91-6.