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Consumer Preferences for Organic and Fair Trade Chocolate: Implications for Sustainable Agriculture in the Developing World

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Abstract: This paper examines results of a consumer survey measuring consumer awareness and attitudes concerning two labels, certified organic and certified Fair Trade. These labels provide information about the social, economic and environmental sustainability of the production and marketing practices of goods imported from the developing world. Conjoint analysis is used to measure how consumers value organic and fair trade compared to other attributes like price. Results indicate favorable attitudes and value placed on these the sustainable attributes, and imply a role for these labels to provide incentives for the adoption of more sustainable practices.

Key Words: conjoint analysis, Fair Trade, organic

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Introduction

The United States is the world's leading importer of food; US food imports increased by over $130 billion between 1996 and 2003 (Jerado, 2004). As increasing quantities of food are imported into the US, American consumers have a large impact on the sustainability of global agriculture. Unfortunately, much of this impact is negative, reflecting little ecological or socio-economic sustainability. Horticultural crops, which comprise the bulk of US food imports (Jerado, 2004), often use large amounts of pesticides and contribute to ecological and farm worker health problems. For example, the World Health Organization claims that 90% of accidental pesticide poisonings occur in the developing world (Jeyaratnam. 1985; Jeyaratnam, 1990). Several pesticides which are banned for use in the US are still exported and used on food crops later imported into the US.

Some critics (e.g., Moore-Lappe et al., 1998) also charge that the use of land in developing nations to grow export luxury crops is a contributor to world hunger. Global commodity markets and trade policies exert downward pressure on farm gate prices (Oxfam, 2004), resulting in low and/or unstable prices, and in many cases providing inadequate income for poor farmers to cover the costs of production and earn a decent living. One mechanism with potential to mitigate these problems is the use of voluntary labels that differentiate products that are grown and distributed according to principles of social and economic justice, and ecological stewardship. The two most prominent examples of these labels are Certified Organic and Fair Trade. The organic label can be used by foods grown both in the US and abroad; Fair Trade is mainly used on imported foods from developing nations.

This paper addresses the following questions: how familiar are consumers with these labels? How much do they value these "process" (Caswell, 1998) attributes? What do these findings imply for expansion of the market for these goods, and for increasing the social, economic and ecological sustainability of agriculture in the developing world? It focuses on the results of a study done in conjunction with a small firm, Ithaca Fine Chocolates, that sells certified Fair Trade, organic chocolate bars, donates a proportion of profits to charity (art education efforts) and includes small reproductions of artwork from local, child and other under-represented artists (art cards). The paper begins with a brief discussion and background on organic and Fair Trade and the possible contribution of these products to wider development goals. Methods and results of the conjoint study are then provided, along with implications for product, market and community development.

Organic Agriculture and Fair Trade

In order to be labeled organic, all foods sold in the US must be certified by an agency that has been accredited by the USDA National Organic Program (NOP). A number of international agencies have been accredited. Premiums over conventional prices are common at the retail level. If these premiums are passed down the supply chain to producers, this creates a great incentive for adoption of organic techniques.

Certification fees are paid by the producer. Organic certification also requires a transition period, during which no premium is received despite the fact that yields are often lower due to a lack of soil fertility, natural predators, etc., and a learning curve for producers as they become familiar with the complex tasks of organic management. High certification fees, compounded by price volatility and lack of technical assistance in transitioning, have been identified as barriers to the adoption of organic techniques (Blowfield et al., 1998; Raynolds, 2002). There is little or no information available on the quantity of US imports of organic foods (Kortbech-Olesen, 2002), but there is little reason to believe it exceeds the overall market share of organics in the US, somewhere around 2-3 %.

Fair Trade (FT) began as a movement seeking to find markets for products from excluded nations, often as part of a "solidarity" movement (Renard, 2003). As the movement evolved, the emphasis of the appeal was changed from political to humanitarian motives (Renard, 2003). It is comprised of two types of agencies: FT Organizations, which deal directly in commerce; and labeling or regulatory agencies. Today the Fair Trade movement is seen as having two broad aims: (1) increasing the overall welfare of participating producers and, by extension, their communities and families – a development agenda; (2) correcting for unfair market practices, or more broadly, to bring ethics into the marketplace (Mayoux, 2001; Tallontaire, 2002). FT directly contributes to sustainable development in a number of ways (see Mayoux, 2001). Producers are guaranteed a minimum price; this price support often means the difference between survival and bankruptcy (Raynolds, 2002). Producers also get marketing, organizational and technical training, access to credit, and increased bargaining power. Under some programs, communities get funds for education or health care, and a greater awareness of land use and development issues (Mayoux, 2001).

No single legal standard for FT exists, although the majority of established FT organizations collaborate under Fair Trade Labeling Organizations International (FLO). In order to gain

certification by these bodies, both producers and buyers must meet certain requirements (Renard, 2003). Buyers must purchase directly from growers or cooperatives, paying a price that covers both production costs and a social premium; they must make advanced payment, and offer long term contracts to allow long term planning and sustainable production techniques. Producers must participate in democratic organizations (and allow workers to do so too, including unions), protect the environment and eschew child or forced labor. FT deals exclusively with organizations that do not discriminate by race, gender, creed, etc. (Rice, 2001).

In many ways, the FT movement is at a place similar to where organic was 10-15 years ago: confined to niche markets, below the radar screen of the mainstream food system. Once awareness and broader demand grew, the movement was threatened by the entry of firms that were not "firmly rooted in a normative description of farming with nature," (Geier, 1998), who did not share the core values of the founding spirit of organic, who embraced organic only for its profitability. Profit opportunity invited fraud, leading in part to the creation of the NOP. The dilution and trivialization of the standards is an ongoing threat. Indeed, we have recently witnessed an event where a big producer in Georgia, Fieldale Farms, successfully lobbied Congress to lower the standards for organic poultry (allowing the use of non-organic feed), only to have it reversed in a later bill. Clearly, this was an example of the producer wanting to gain the premium by weakening the rules so that its current practices can be called organic rather than complying with the stricter standards. FT will no doubt face similar trials if and when it gains a larger market share.

Together, the organic and FT labels can foster sustainable development and adoption better than either one singly. Organic, as defined by the USDA, does little to address social justice issues; FT has less stringent environmental standards than organic. Indeed, international organic and FT standards require only that "attempts be made" (Raynolds, 2002) to address social and ecological issues, respectively. USDA organic standards require no social justice component at all.

Organic and FT alone are not magic bullets for rural poor and sustainable development. FT's emphasis on single commodities does not necessarily encourage good natural resource management. Demand for FT and organic are largely confined to upper and middle class consumers in the USA and EU. Many ethical trading schemes have depended upon a catalyst

and some sort of subsidy (grant, soft loan) to become established and remain financially viable (Blowfield et al., 1998). Finally, dependency on foreign trade, even an enlightened model, may not contribute to sustainability in the long run. Many see global trade as being inherently unsustainable (Blowfield et al., 1998), as it is fueled by petroleum - abundant, available and fairly cheap now, but rapidly approaching depletion with no alternative in sight. Ecological problems, political conflicts and wars over oil supplies further threaten its medium term usefulness and availability.

Methods

A survey was administered to 123 consumers in the Ithaca, New York area. Most responses (91) were garnered during a four hour session on a Saturday afternoon in October 2003, at a pedestrian mall in Ithaca; the rest (32) were from students taking a class in the department and program where the authors worked. A t-test between these two sample groups in the preliminary analysis did not show any statistically significant difference in attribute preferences for food purchases. Ithaca Fine Chocolate (IFC) donated a few cases of their product as an incentive to participate. The survey contained three parts. The first part of the questionnaire gathered information on consumer awareness and purchasing habits for organic, fair trade and charitable donation labels. The second part gathered demographic information that has been shown in other studies to influence use of labels.

The third and final part of the questionnaire measured attribute preferences in food purchases. These preferences were measured using a technique called conjoint analysis, in which the relative amounts of utility or value consumers place an individual attributes are measured. Conjoint analysis measures not only that the consumer values one attribute over another, but how much more each trait is valued.

Respondents were asked to assume that they were about to purchase a 16 ounce premium Swiss chocolate bar. The choice set had five different attributes each with two levels as follows (levels in parenthesis): Price ($2.99 or $3.79), Fair Trade Certified (Yes or No), USDA Organic certified (Yes or No), Art Card Inside (Yes or No), and 10% of profit donated to charity (yes or no). This study focuses primarily on the organic and Fair Trade attributes. The Art Card and charitable donation attributes were measured at the request of IFC, the collaborating firm. The price levels comprise the bar's current retail price ($2.99) and the price ($3.79) that would need to be charged if the IFC were to enlist a mass distributor and access nationwide markets.

An orthogonal array was used to narrow the choice set from 32 possible combinations to eight. Table 1 shows the orthogonal array of combinations used in the survey. All effort was made to simulate an actual in-store purchase decision. Respondents were told to assume that an attribute is present *only if* there is a label on the card to that effect. Negative labels such as "Not USDA certified organic" were avoided as consumers are unlikely to encounter these in real life.

Table 1. Orthogonal Array of Combinations Used in the Survey

Choices	Price	Fair Trade Certified	USDA Organic Certified	Art Card Inside	10% of Profits to Charity
Bar A	2.99	Yes	Yes	Yes	Yes
Bar B	2.99	Yes	Yes	No	No
Bar C	2.99	No	No	Yes	Yes
Bar D	2.99	No	No	No	No
Bar E	3.79	Yes	No	Yes	No
Bar F	3.79	Yes	No	No	Yes
Bar G	3.79	No	Yes	Yes	No
Bar H	3.79	No	Yes	No	Yes

Respondents were asked to rank eight stimulus cards representing attributes from the orthogonal array from 1 (the most preferred) to 8 (least preferred). The choice of ranking versus rating (e.g., on a scale of 1-100) is the subject of much discussion in conjoint literature. Rating has the advantage of being cardinal as well as ordinal, while ranking is merely ordinal. However, we chose the ranking method because it most closely reproduces consumers' real shopping decision. Consumers look for the item they prefer most; if it is present, they buy it. If not, they look for the second most preferred, and so on. It is unlikely that consumers rate each option on a cardinal scale and make the purchase based on this calculation.

Sample Description

The following statistics describe the demographic traits of the survey respondents, as well as their attitudes, familiarities and behaviors regarding each food attribute. The respondents were 44% male, 56% female; 83% were white. The mean and median years of birth were 1970 and

1976, respectively. Nine percent were born before 1950 and 30% were born after 1980. The median annual income was between $25,000 and 50,000. Thirty-four percent had incomes less than $25,000, while 22% had incomes of $100,000 or higher.

The respondents had a high rate of education, not surprising for a college town. The majority had at least some college education, with a mean of three years of college. Only 12% had twelve (High School graduate) or less years of education, while about two-thirds had done at least some post-graduate work. Household sizes were fairly small: the average respondent shopped for about two people, including self. Given that respondents were selected via convenience sampling, it is important to note that conclusions are limited to the sample and that comparisons to any broader population are not well supported.

Certified Organic was the most familiar and most commonly used label by these people. More respondents had heard of or seen the organic label organic (88%) than the Charitable Donations (66%) or Fair Trade (57%) labels. More people had bought organic (74%) than Charitable Donations (60%) or Fair Trade (43%). When asked how often (never, rarely, occasionally, usually, always) they looked for those labels when making purchase decisions, 26% said they looked for organic usually or always, compared to only 5% for Charitable and 7% for Fair Trade. Only 45% looked for the organic label "never" or rarely," compared to 61% for Fair Trade and 66% for Charitable.

Conjoint analysis

Ordinary least squares (OLS) regression was used in the conjoint analysis to calculate average part-worths, the amount of relative value the consumer places on a given attribute, of all respondents. While average part-worths have lower predictive validity than individual part-worths, they are easier to understand for large samples and allow for easy interpretation of the conjoint analysis results. The regression model used to estimate the part-worths is given below in Equation 1.

Equation 1. $R_{in} = ß_0 + ß_1X_{1in} + ß_2X_{2in} + ß_3X_{3in} + ß_4X_{4in} + ß_5X_{5in} + e_{in}$

for $i = 1, 2, \ldots, 8$ and $n = 1, 2, \ldots, 123$.

The equation regresses each rank assigned to the *i*th combination in the orthogonal array by the *n*th respondent (R_{in}), on the five attributes. The attributes are expressed as dummy variables

using effects coding where the first level of an attribute ($2.99, certified Fair Trade, certified USDA Organic, Art Card inside, 10% of Profits donated to charity) is coded 1 and the second level is coded -1. Regression results for Equation 1 are given in Table 2. All parameters are statistically significant at 95 percent confidence level.

Table 2. OLS regression coefficients

Variable	Estimate	t-statistic
Intercept	4.500***	81.179
Low Price ($2.99)	-0.900***	-16.243
Fair Trade Certified	-0.720***	-12.980
USDA Certified Organic	-0.636***	-11.477
Art Card Inside	-0.169**	-3.043
10% Profit to charity	-0.695***	-12.540
Adjusted R^2	0.42	
F-statistic	146.11	

Note: *** statistically significant at 99 % confidence level, ** at 95%.

Table 3 translates the regression results for easy interpretation. The second column shows the combination of coefficients used to derive part-worths for each individual attribute given in the third column. Because the most preferred combination was given a low rank value of 1 while the least preferred combination was given a high rank value of 8, the estimated path-worths are counter-intuitive, i.e., the lowest values indicate the most preferred attribute levels. To correct for this, the part-worths for each attribute were expressed as an absolute difference from the part-worth of the least preferred level resulting the in the intuitively appealing adjusted part-worths format given in the forth column of Table 5.

The adjusted part-worths indicate that the most preferred combination is a chocolate bar priced at $2.99 that is Fair Trade certified, USDA organic certified, with an Art Card inside, and donating 10% of profits to charity. Given the positive and binary nature of the attribute levels, this choice is expected and rather uninteresting. A more interesting application of these results is to compare the full range of combinations beyond the orthogonal array by summing up the attribute level adjusted part-worths.

Table 3. Part-worths for each attribute level.

Attributes and levels	Coefficients	Estimated Part-worths	Adjusted Path-worths
Price			
$2.99	$ß_0 + ß_1$	3.600	1.800
$3.39	$ß_0 - ß_1$	5.400	0
Fair Trade Certified			
Yes	$ß_0 + ß_2$	3.780	1.440
No	$ß_0 - ß_2$	5.220	0
Organic			
Yes	$ß_0 + ß_3$	3.864	1.272
No	$ß_0 - ß_3$	5.136	0
Art Card Inside			
Yes	$ß_0 + ß_4$	4.331	0.338
No	$ß_0 - ß_4$	4.669	0
10% of Profit to Charity			
Yes	$ß_0 + ß_5$	3.805	1.39
No	$ß_0 - ß_6$	5.195	0

Relative Importance of Attributes

A useful way of summarizing results from conjoint analysis is to derive the relative importance of each attribute for different market segments. To do this we first have to compute the range *(r)* of each attribute i.e., the absolute part-worth difference between the most desired level and the least desired level. Each attribute range is then expressed as a percentage of the sum of all attribute ranges as shown in equation 2 (in this case, r = 1, 2,…,5).

Equation 2 Relative importance *(r)* = $\frac{100 \times range(r)}{\sum_r range(r)}$

For the entire sample, low price gets get highest part-worth of 30%. This is not surprising considering the substantial price decrease of 21% from $3.79 to $2.99. The next three most important attributes are of almost equal importance: fair trade (23%), charity contribution (22%) and Certified Organic (20%). The enclosed Art Cart has the least part-worth of 5%. Breaking down the results by demographic segments yields interesting results. For example, women seem to care less about price than men and income levels appear to have no effect at all on the part-worths of contributing to charity. Because of multicolinearity between demographic segments, the results have to be interpreted with caution. Individual effects of each

demographic characteristic can not be isolated. Lastly, it is important to note that price level and donation to charity are continuous attributes. If different price levels or percentage contribution to charity are used, the results can vary significantly.

Table 4. Relative Importance of Attributes

Demographic group	(n)	Part Worths (%)				
		Low price	Fair Trade	Organic	Art Card	Charity
All	984	30	23	20	5	22
Sex						
Male	482	32	20	23	4	21
Female	544	26	26	18	7	23
Age (years)						
Below 20	104	33	17	24	6	20
20 to 40	520	29	24	20	4	23
Above 40	328	29	22	20	8	21
Education						
Below College	120	15	24	33	9	19
College	536	28	24	18	5	25
Above College	312	32	22	21	6	19
Income						
Below $25000	328	29	26	19	4	22
$25000-$50000	240	19	24	27	8	22
Above $50000	376	25	25	22	6	22

Note: Part-worths may not add to 100 percent due the rounding off and the number of observations (n) per demographic variable do not sum to 984 due to non-responses.

Cost-benefit analysis

If products are designed to satisfy the average consumer, then we expect a positive linear relationship between marginal costs of adding an attribute and that attribute's part-worth. Table 5 compares the whole sample part-worths to the marginal cost of producing the attribute. This cost-benefit analysis gives the manufacturer a sense of cost effectiveness. The estimated cost data were obtained from Ithaca Fine Chocolate and are based on a 16 oz. bar. Note that the costs of Fair Trade Certified and USDA Certified Organic include both ingredient sourcing and certification costs. Cost effectiveness was derived by dividing the part-worths by their share of marginal costs

Table 5. Cost-Benefit analysis

Attribute	Part-worth	Marginal cost	Share of marginal cost	Cost effectiveness
Low Price ($2.99)	30%	$0.80	62%	0.48
Fair Trade Certified	23%	$0.12	9%	2.5
USDA Certified Organic	20%	$0.14	11%	1.81
Art Card Inside	5%	$0.06	5%	1
10% Profit to charity	22%	$0.15	12%	1.83

The results in Table 5 are interesting for a manufacturer. While lower prices have the highest part-worth, the cost to the company is too high resulting in a low cost effectiveness. On the other had, Fair Trade certified, USDA Certified Organic and 10% donation to charity are fairly cheap to produce compared to their value to consumer.

Conclusions

The growing awareness that "shopping is voting" presents opportunities for small firms to differentiate themselves from their competitors by touting process attributes related to ethical social and environmental issues. Two of these attributes, organic and Fair Trade (FT), also hold promise to contribute positively to the developing nations, at least in the short run, by providing incentive for the adoption of socially, economically and ecologically sustainable practices and providing alternatives to decidedly unsustainable ones. Even if trade or price premiums for these products decline over time, the benefits of using more ecologically sound production systems and the increase in human and social capital from participation in Fair Trade programs may bring enduring benefits.

Results of this study indicate that these consumers are aware of the organic and FT labels and varying percentages looked for these labels when making purchase decisions. While low price is an important factor, especially for men and people with lower incomes, niche market opportunities are apparent. Women and people with middle or high incomes value FT as much or more than low price. Organic and charitable donations attributes are also highly valued by certain segments of the sample group.

While organic foods have risen in popularity and have gained wide-spread acceptance and recognition, these people are still unfamiliar with FT foods. The fact that relatively few people

had heard of FT, yet still valued this trait so highly in the conjoint exercise, indicates that there may be untapped potential for increased demand for FT. If this pattern is true for the general population, i.e., that few people have heard of FT but value it once they hear about it, generic advertising or other collective effort to raise awareness of their products would likely increased demand for these products

Given its small sample size and non-random elicitation methods, this paper is only a beginning. The degree to which the results can be extrapolated to broader populations is uncertain. This study does, however, hint at the preferences of the types of consumers likely to buy Fair Trade and organic: well-educated, higher income people from progressive college towns. A random sample over a greater geographic area would strengthen knowledge of these issues. Given the great potential benefit, to small firms, and to the sustainability of producers and communities from the developing world, such efforts would have great potential impact both here and abroad.

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