ASSESSING DOMESTIC DEMAND FOR ORGANIC AND LOCALLY GROWN PRODUCE ON AN "ORGANIC ISLAND": DOMINICA'S DILEMMA

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PRELIMINARY RESULTS: PLEASE DO NOT QUOTE

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Abstract

With the intent of improving agricultural revenues and solidifying her place as an eco-tourism destination, it has been proposed that the island nation of The Commonwealth of Dominica convert all agricultural activities to organic production. This study explores Dominica's current and potential domestic demand for organic and/or locally grown fruit and vegetables. Surveys were conducted with 200 Dominican consumers to assess their opinions and willingness-to-pay (WTP) for these products. Descriptive and binomial logistic regression analyses were used to evaluate survey data. Overall this study found that, on average, Dominican consumers are willing to pay a slight margin (~3.1%) for organic and locally grown produce. These results were found to vary significantly across various segments of the sampled population. Results from this analysis suggest that, from the perspective of domestic consumers, Dominica should explore the possibility of becoming an "Organic Island."

Motivation

Dominica faces a unique set of challenges. As with many other Caribbean nations, Dominica has historically been dependent upon agriculture. Over the past several hundred years, the island's economy has been largely supported through the concentrated mono-cropping of a variety of export-oriented crops. Today, approximately 45% of Dominica's labor force is employed in the agricultural sector (FAVACA, 2008).

While neighboring countries have economically benefitted from tourism, due to its lack of white sand beaches, Dominica is not a typical tourist destination and has instead catered to eco-/wellness tourists. Bridging its agricultural foundations with the ecological preservation needed to support its tourist industry, the government of Dominica has signaled its interest in transforming Dominica into an Organic Island ('Organic Dominica') by 2015.

Objectives

The objectives of this study are two-fold. First, through the use of consumer, retailer, and restaurant surveys, this study examines the potential domestic demand for organic and "locally grown" produce in Dominica. Second, this study introduces an alternative approach of eliciting willingness to pay (WTP) values. This approach bridges the commonly used open-ended question and dichotomous choice question formats while seeking to minimize the limitations of both approaches.

Data and Methods

Three surveys were developed, pre-tested and used to collect business and consumer demographic characteristics and information on willingness to pay for organic and locally grown foods on the island. The first survey focused on consumers, while the second and third survey collected data from food service operators food vendors respectively.

Data was collected during the summer of 2009. Surveys were administered through subject interviews at nine urban, suburban and rural sites across the island of Dominica. A random market intercept approach was used to recruit consumer participants in this study. Data was collected from all food service operators and food vendors in each sampled site who were willing to be surveyed. In total 200 Dominican consumers, 31 food service operators and 16 food vendors were surveyed. Descriptive statistics and binomial logistic regression analyses were used to evaluate survey data.

Results

A summary of demographic characteristics of those who completed the consumer survey are presented in Table 1; this table also summarizes mean consumer WTP more for organic produce. Table 2 presents the outcomes of regressions that examine consumer WTP for organic and locally grown fruit and vegetables.

Results indicate that Dominican consumers are willing to pay more for both organic and locally grown produce. This study found that people who live in the rural areas felt it important that their food be sourced from the Caribbean, and who agreed that the use of synthetic chemicals has a negative effect on the environment, were willing to pay more for organically grown fruits and vegetables. Other variables including the price premiums for organic produce, a tertiary level of education, and marital status were found to be negatively correlated with willingness to pay for organic produce. Among these variables, only price premia and respondent opinion that it was important to source their products from the Caribbean were useful in explaining the willingness to pay for "locally grown" produce. Consumer demographic factors found to affect WTP for organic food are similar to those found in other studies conducted on WTP internationally (Giovandasmy and Italia, 2001; Thompson, 1998; Angulo et al., 2003; and Loreiro and Hine 2002).

At present, several factors limit domestic consumption of organic produce in Dominica including: limited availability, lack of an organic standard and certifying institution, and the currently high price premiums for these products. The lack of proper certification from a recognized and respected intuition is considered the most serious limitation to domestic consumption of organic foods in Dominica. With an accepted certification program customers would be able to distinguish organic from conventionally produced foods, and once trust is established between producers and consumers, would increase their willingness to purchase and increase the premia they are willing to pay for organic produce.

Importantly, implementation of organic standards through a registration program will also enable more farmers and processors to enter into organic production, will open the possibility of exporting organic produce to other Caribbean islands, and may provide an additional draw for Dominica with eco-tourists.
Based on the survey results it would appear that should organic produce become more widely available, some population segments will demand and be willing to pay for these products. Results from this analysis suggests that from the perspective of domestic consumers, Dominica should continue to exploring the possibility of becoming and "Organic Island."

Table 1. Mean Consumer WTP More For Organic Produce By Gender and Other Demographic Variables

Variable Level	Observations	Mean WTP[a]	SD	Observations	Mean WTP [a]	SD
	Male Respondents			Female Respondents		
Household monthly Income						
<$999	10	9.750	8.62	18	10.138	7.93
$1000-1999	20	11.750	9.77	24	12.395	9.28
$2000-2999	21	10.238	8.55	20	14.375	7.38
3000-3999	6	12.500	9.08	13	11.346	6.97
>$4000	18	13.055	8.85	19	12.105	8.91
Education Level						
Primary/Secondary	22	26.250	21.07	44	26.515	18.43
Tertiary/2/4years college	38	25.138	19.24	31	36.843	23.33
Graduate studies	13	24.166	12.31	17	17.107	11.09
Age(years)						
18-24	7	11.071	7.19	13	11.346	8.51
25-34	21	10.833	8.45	30	12.416	7.84
35-44	22	11.136	9.09	33	11.818	8.46
45-54	18	13.055	9.76	12	13.125	8.73
55 plus	4	8.750	10.89	6	12.916	9.67
Marital status						
Single	38	11.118	8.96	58	12.974	8.79
Married	30	10.666	8.73	33	9.924	6.45
Divorced/separated	5	17.000	10.22	1	25.000	-
Ethnic group						
Black	53	11.462	8.92	63	12.579	8.28
Mixed/Indigenous	8	11.875	8.21	14	10.178	7.24
Asian	7	6.785	3.13	1	10.000	-
White	3	17.500	12.99	10	9.750	8.29
Total Respondents	**88**			**112**		

Notes:
[a] Average willingness to pay more for organic fruits and vegetables over conventional produced Fruits and vegetables; SD=Standard Deviation.
Table presents disaggregate results of the maximum willingness to pay only for those who indicated they were willing to pay more for organic produce

Table 2. Logistic Model Results for Dominican Consumer WTP of Organic and Locally Grown Produce

Variable	Model One	Model Two
	Organic produce Estimate (SD)	Locally grown produce Estimate (SD)
Intercept	-0.704 (1.19)	0.663(1.19)
Percent willing to pay more	-0.139 (0.03)***	-0.185(0.03)***
Male	0.023(0.39)	0.185(0.39)
Tertiary Education	-0.715(0.43)*	-0.385(0.43)
Graduate studies	-0.533 (0.46)	0-0.287(0.40)
Ethnicity (Black)	0.257(0.17)*	-0.044(0.19)
Urban	-0.962(0.51)	0.128(0.55)
Interaction(Rural and WTPM)	0.269(0.45)	-0.389(0.45)
Household income <$999	-0.627(0.51)	-0.842(0.54)
Household income>$4000	-0.386(0.64)	-0.638(0.62)
Married	-0.686(0.39)*	-0.166(0.40)
Primary purchaser of food	0.349(0.43)	-0.279(0.44)
Important source food from Caribbean	0.291(0.17)*	0.345(0.18)*
Important source food from Dominica	0.161(0.18)	0.187(0.19)
Negative effect of chemicals on Environment	0.292(0.14)**	0.005(0.14)
Too Expensive	-0.196(0.15)	-0.010(0.15)

Notes: ***, ** and * represents statistically significant coefficients are significant at α =0.001, α=0.05 and α=0.1levels respectively. SD= Standard Deviation
Significance of Chi-Square Statistic: 0.0001 for both models
n = 188

Conclusions & Future Research

Implementation of organic standards through a registration program will enable more farmers and processors to enter into organic production, will open the possibility of exporting organic produce to other Caribbean islands, and may provide an additional draw for Dominica with eco-tourists. In Dominica, demographic factors that affect WTP for organic food are similar to those found in other studies (Giovandasmy and Italia, 2001; Thompson, 1998; Angulo et al., 2003; and Loreiro and Hine 2002). Based on the se results ,it would appear that should organic produce become more widely available, some population segments will demand and be willing to pay for these products. Results from this analysis suggests that , from the perspective of domestic consumers, Dominica should continue to exploring the possibility of becoming and "Organic Island."

There is need and much opportunity for additional research on this topic. As a starting point, to further assess potential demand, research which examines the demand and willingness to pay for organic products on other Caribbean Islands is needed. This is especially true of Dominica's current and potential trading partners. Research is also needed to determine the demand for specific organic demand in Dominica. Combining this information with willingness to pay estimates information could permit a reallocation of Dominica's agricultural land to products with the greatest profit potential.