Price Differentials in the Ontarian Organic Market

By: Alexei Porturas

Introduction and Objectives

The organic market is growing at an unbelievable rate year after year and has been generating high returns and has increased in market size value. However, the true factors underlining the significant growth in the organic sector market are largely responsible to the consumers' perception towards organic products.

The initial steps of this project involved analyzing the pricing strategies and differentials for organic food in Ontario. This includes a combination of certified organic products and non certified organic products in various stores located in Ontario. The analysis of these products would involve using SPSS, a marketing analysis tool, to uncover trends related to pricing in the organic market from the data observed. In order to begin the analysis, it was necessary to have a firm understanding of the organic market as well as an understanding on how to use SPSS. A good portion of the initial work involved research about the organic market and its development as well as how to properly use SPSS.

The Two main objectives were the following:

1. To determine the pricing strategies and price differentials for organic food in Ontario,

2.Look for new organic food price trends by channel of distribution and by product.

Population Studied

The Ontarian region was surveyed with a total of 195 random products with various certifications, food mileage, processing and stores.

Sample Distribution

		Frequency	Percent	Valid Percent
Valid	Specialty Store	68	34.5	34.7
	Retail Store	128	65.0	65.3
	Total	196	99.5	100.0
Missing	Missing Data	1	.5	
Total		197	100.0	

		Frequency	Percent	Valid Percent
Valid	Certified Organic	118	59.9	60.2
	Contains Organic	3	1.5	1.5
	Not Organic	75	38.1	38.3
	Total	196	99.5	100.0
Missing	Missing Data	1	.5	
Total		197	100.0	

		Frequency	Percent	Valid Percent
Valid	Imported	126	64.0	64.9
	National	25	12.7	12.9
	Provincial	24	12.2	12.4
	Local	19	9.6	9.8
	Total	194	98.5	100.0
Missing	Missing Data	3	1.5	
Total		197	100.0	

		Frequency	Percent	Valid Percent
Valid	Breads & Grains	9	4.6	4.6
	Dairy	28	14.2	14.2
	Fruits	46	23.4	23.4
	Meat	5	2.5	2.5
	Other	7	3.6	3.6
	Processed/ Transformed Foods	39	19.8	19.8
	Vegetables	63	32.0	32.0
	Total	197	100.0	100.0

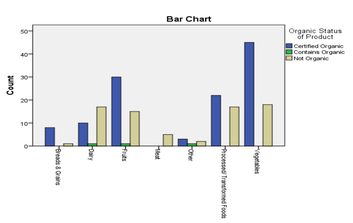
Organic Food Prices and Influencing Factors

Factors such as organic certification and food mileage were analyzed to determine whether they influenced organic food prices.

	N	Mean	Std. Deviation	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound
Breads & Grains	9	$5.8444	$1.84872	$4.4234	$7.2655
Dairy	28	$11.3286	$10.01624	$7.4447	$15.2125
Fruits	45	$3.1111	$1.47004	$2.6695	$3.5528
Meat	5	$4.6400	$1.56461	$2.6973	$6.5827
Other	7	$6.6714	$3.75132	$3.2020	$10.1408
Processed/ Transformed Foods	38	$4.9316	$2.52556	$4.1014	$5.7617
Vegetables	62	$3.2726	$1.50977	$2.8892	$3.6560
Total	194	$5.0000	$4.98405	$4.2942	$5.7058

The Effects of Organic Certification

Interestingly enough, fruits contained a high level of certified organic products, almost double that of non organic. Furthermore, the chi square test (a statistical test) shows that there is a significant difference between the levels of organic certification and the type of product which demonstrates that certain products do tend to have more of a certain level of certification.



The Effects of Food Mileage on Products

The results of the crosstabulation demonstrate that the majority of fruits are in fact imported. Furthermore, the chi square test revealed that there is a significant difference between the variety of products and their food mileage which allows us to believe that certain products had more of a certain level of organic certification. Also, as previously analyzed, imported products tend to be organic certified which typically yield the lowest price.

			Food Mileage			
			Imported	National	Provincial	Local
Food Category	Breads & Grains	Count	6	2	1	0
		% of Total	3.1%	1.0%	0.5%	0.0%
	Dairy	Count	4	4	10	8
		% of Total	2.1%	2.1%	5.2%	4.1%
	Fruits	Count	39	5	2	0
		% of Total	20.1%	2.6%	1.0%	0.0%
	Meat	Count	0	2	0	3
		% of Total	0.0%	1.0%	0.0%	1.5%
	Other	Count	3	1	1	2
		% of Total	1.5%	0.5%	0.5%	1.0%
	Processed/ Transformed Foods	Count	20	6	7	5
		% of Total	10.3%	3.1%	3.6%	2.6%
	Vegetables	Count	54	5	3	1
		% of Total	27.8%	2.6%	1.5%	0.5%
		Count	126	25	24	19
Total		% of Total	64.9%	12.9%	12.4%	9.8%

	N	Mean	Std. Deviation	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound
Imported	124	$3.5984	$1.85257	$3.2691	$3.9277
National	25	$4.1600	$2.26991	$3.2230	$5.0970
Provincial	24	$5.1792	$2.21575	$4.2435	$6.1148
Local	19	$12.2632	$8.90370	$7.9717	$16.5546
Total	192	$4.7266	$4.17901	$4.1317	$5.3214

Conclusion for Objective 1

Through the analysis conducted and the various tests done, we can believe that due to a combination of factors the average price of a product can be explained. For example, throughout the analysis the focus was to explain why fruits tended to have on average a lower price than any other product. It was concluded that fruits were primarily imported. Furthermore, imported products tended to be mostly certified organic products which tended to be cheaper. Thus, because most fruits were imported certified organic products contributed to it yielding a lower price.

Thus, the average price of any product can be explained due to the combination of factors such as its level of organic certification and its food mileage. On average products that are imported and certified organic tend to be cheaper than any level of food mileage and level of organic certification.

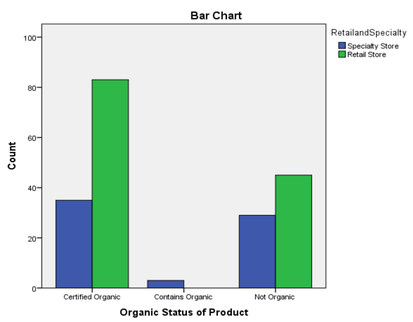
Comparing Specialty and Retail Stores

Stores were grouped based on whether they were considered specialty or retail stores. The second objective aimed to explain the difference in price between specialty and retail stores.

	N	Mean	Std. Deviation	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound
Specialty Store	67	$7.6731	$7.42595	$5.8618	$9.4845
Retail Store	127	$3.5898	$1.83307	$3.2679	$3.9117
Total	194	$5.0000	$4.98405	$4.2942	$5.7058

Retail vs. Specialty Stores (Organic Status)

When comparing specialty and retail stores we see that on average specialty stores tend to have a higher average price and standard deviation while retail stores tend to have a lower average price and a lower standard deviation. Furthermore, analysis demonstrates that there is a significant difference between the prices offered at retail and specialty stores. This could be in part due to the products they offer, their food mileage and their degree of organic certification. The following analysis will aim to determine the factors that contribute to specialty stores yielding significantly higher price than retail stores.



Retail vs. Specialty (Food Mileage)

Analyzing the frequency chart we see that retail stores offer a lot more imported products than any type of product while specialty stores offer a lot more local products. Furthermore, the respective chi square test shows that there is a significant difference between the amount of products and their food mileage in comparison to the category of store. If we refer to table 18 we see that local products are on average more expensive which contributes to the increase in average price of specialty stores being higher. More evidence is provided by the results of the one-way ANOVA which demonstrate that there is a significant difference between food mileage and price.

Food Mileage * RetailandSpecialty Crosstabulation

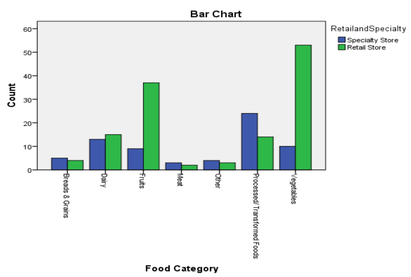
			RetailandSpecialty		Total
			Specialty Store	Retail Store	
Food Mileage	Imported	Count	41	85	126
		% of Total	21.1%	43.8%	64.9%
	National	Count	5	20	25
		% of Total	2.6%	10.3%	12.9%
	Provincial	Count	3	21	24
		% of Total	1.5%	10.8%	12.4%
	Local	Count	17	2	19
		% of Total	8.8%	1.0%	9.8%
Total		Count	66	128	194
		% of Total	34.0%	66.0%	100.0%

	N	Mean	Std. Deviation	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound
Imported	124	$3.5984	$1.85257	$3.2691	$3.9277
National	25	$4.1600	$2.26991	$3.2230	$5.0970
Provincial	24	$5.1792	$2.21575	$4.2435	$6.1148
Local	19	$12.2632	$8.90370	$7.9717	$16.5546
Total	192	$4.7266	$4.17901	$4.1317	$5.3214

Retail vs. Specialty (Product Variety)

When investigating the distribution there is a higher concentration of fruits and vegetables in retail stores rather than specialty stores. Moreover, there is sufficient evidence to believe that that there is a difference between the varieties of products offered in each category of store. Due to the unequal distribution of products within retail and specialty stores we can conclude that the variety of products offered at stores has an impact on the average price of retail and specialty stores. Also, the average price of each product allows us to believe that the higher concentration of fruits in retail stores contributes to its average lower price than specialty stores..

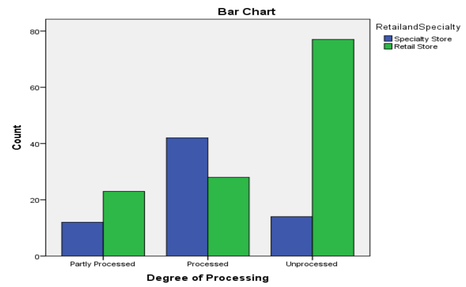
Thus, a conclusion can be drawn that because there is an unequal distribution of variety of products between retail and specialty stores that consequently this affects the average price of the store. For example, specialty stores have a higher concentration of processed foods which tend to be more expensive while retail stores offer more fruits and vegetables which are generally cheaper. Up to this point the following factors have been analyzed; degree of organic certification, food mileage and the variety of products. The next analysis will determine whether the degree of processing affects the price of retail or specialty stores.



	N	Mean	Std. Deviation	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound
Breads & Grains	9	$5.8444	$1.84872	$4.4234	$7.2655
Dairy	28	$11.3286	$10.01624	$7.4447	$15.2125
Fruits	45	$3.1111	$1.47004	$2.6695	$3.5528
Meat	5	$4.6400	$1.56461	$2.6973	$6.5827
Other	7	$6.6714	$3.75132	$3.2020	$10.1408
Processed/ Transformed Foods	38	$4.9316	$2.52556	$4.1014	$5.7617
Vegetables	62	$3.2726	$1.50977	$2.8892	$3.6560
Total	194	$5.0000	$4.98405	$4.2942	$5.7058

Retail vs. Specialty (Degree of Processing)

Analyzing the results we can see that specialty stores tend to have more processed products while retail stores have more unprocessed products. In addition, there is evidence to believe that there is a higher concentration of a certain degree of processing with respect to their store, as obtained through the chi square test. Logically, this concurs with our previous analysis when investigating the factors that influence the price of products. For example, retail stores tend to have more and vegetables and fruits, which are unprocessed, which affects retail stores having average cheaper prices.



	N	Mean	Std. Deviation	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound
Partly Processed	35	$5.3629	$2.51946	$4.4974	$6.2283
Processed	69	$7.2406	$7.37205	$5.4696	$9.0115
Unprocessed	90	$3.1411	$1.57522	$2.8112	$3.4710
Total	194	$5.0000	$4.98405	$4.2942	$5.7058

Conclusion for Objective 2

Therefore, from the analysis conducted in part two we can see that retail stores tend to offer more imported and organic products in comparison with specialty stores. From the analysis we concluded that on average imported products tend to be much cheaper than any other level of average food mileage. This contributed to retail stores having a cheaper average price than specialty stores. In addition, retail stores had a higher concentration of fruits and unprocessed products which also contributed to its lower average price.

On the other hand, specialty stores offer more local products which are on average more expensive than any other food mileage. Also, there was a higher concentration of processed foods in specialty stores which contribute to specialty stores having a higher average price.

Discussions

- What other factors may influence the price of products?
- Why would certain consumers prefer to pay the price premium for local products?
- Why do local products cost more?

Ideas for Further Research

- Other factors that influence the price of organic products
- Other factors that affect the price of retail and specialty stores
- Organic product pricing differences between provinces
- Organic distributor price differences between provinces
- Organic product pricing differences between countries
- Distributor price differences between countries

Thank you to Professor Mehdi Zahaf for His Guidance and Work.

Alexei Porturas
Second Year Student at the Telfer School of Management
Aport081@uottawa.ca