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Islam, Shahidul

MacEwan University

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# **Marketing Organic Foods through Conventional Retail Outlets**

**Shahidul Islam  
MacEwan University**

*This study was designed to (1) understand consumer behavior for buying organic foods, (2) find out premium prices consumers pay for organic foods, and (3) identify reasons why consumers want to pay more for organic foods. A tri-partite information gathering process including review of literature, collection of retail price data and interviewing consumers for their WTP revealed that the magnitude of premium price for organic foods relative to their conventional counterparts varies by items, times, and grocery outlets, and most customers strongly agree that organic foods are healthier, chemical free, environmentally friendly, and better quality.*

## **INTRODUCTION**

The consumption of organic foods has been increasing continuously for the last few decades in most developed countries. In the US, organic food sales grew at a healthy 17.1% from 2007 to 2008, despite economic downturn. The share of organic food sales to total food sales has also increased from 1.2% in 2000 to 4.0% in 2010 (Organic Trade Association, 2011). Organic food sales started with independent specialty grocery stores and cooperatives and, to some extent, with health food chains. Very soon, these were taken over by conventional food outlets. Organic grocery and health food stores now sell less than 50% of organic foods. The organic food is now a \$25 billion industry in the US with an average annual growth of over 5% (Organic Trade Association, 2010). In Canada, organic food industry has been experiencing similar growth pattern although a temporary decline in growth rate was noticed in Quebec, Saskatchewan and British Columbia from 2007 to 2008 (Canadian Organic Growers, 2010). Outside of North America, organic foods have gained an overwhelming popularity around the globe. According to the 2006 world organic acreage data, Australia leads the world with a total of 12.1 million hectares followed by China (3.5 mill ha) and Argentina (2.8 mill ha). The proportion of organic acreage to nonorganic acreage is the highest in European countries (Liechtenstein followed by Austria and Switzerland) (Kresic and Sucic, 2010). Despite rapid expansion of production, marketing and demand, organic industry remains a niche market consisting of less than two percent of the world's total food industry. This niche market, however, is not restricted within any geographical area of the world. Today, the organic industry is flourishing in all continents though not exactly at the same rate. The continuously increased sales volume of organic food is a clear reflection of an increased consumer demand. And as a result of this increase in consumer demand, there has been a considerable change in all three related fronts: producers, retailers and regulators. Such changes warrant the need for understanding of consumer behavior related to organic foods.

Organic foods, at times, were produced in small quantity mostly in family farms and were sold primarily through small specialty grocery stores or cooperatives. Farms producing and selling organic foods used to

identify and associate with each other through such cooperatives. Similarly, in demand side of the market, consumers buying organic foods also used to associate with each other for their preference in organic. The consumer pool was small, but their preference for buying organic was strong. For them, a comparison for price with conventional food was a minor factor. In a way, the market for organic foods was segregated from the market for conventional foods. Over time, the situation has changed and organic food market has become ingrained into the conventional food market as the consumer behavior has evolved.

Large producers of conventional foods traditionally had no interest in producing organic foods. However, increased understanding of large price premium motivated them to enter in the production of organic foods. This allows producers to capture economies of scale and reduce cost of production, which eventually opens the door for conventional retail grocery stores to have dependable and uninterrupted supply of organic foods. Today, almost every conventional store has at least some organic food items in its shelf (Oberholtzer et al. 2005). Some stores have decided to designate specific areas for organic foods, whereas, others have chosen to shelf side-by-side to offer customers an option. Regulators also have to come forward as a huge number of producers claim their products to be organic, and consumers often get confused on identifying which one is to be believed as organic and which one is to be not. The regulatory agency has to ensure and maintain the standard and quality of food. In Canada, the development, maintenance and implementation of food standard are the responsibility of the Canadian Food Inspection Agency (CFIA), a federal organization within the Ministry of Industry.

The widespread distribution and availability of organic foods through conventional grocery stores is an indication of increased activities in both sides of the conventional food market for organic items. From the perspectives of retail grocery stores, it is important to develop complete understanding on the consumer behavior related to organic foods, which was the primary motivation of conducting this study. Researchers from around the world have made considerable efforts in understanding consumer behavior especially on why to buy organic foods and their willingness to pay (WTP) premium prices for organic foods. Some recent examples of such studies are: Lockie (2006) in Australia, Sawyer et al (2006), Anders and Moeser (2008) and Cranfield et al (2009) in Canada, Kresic and Susic (2010) in Croatia, Krystallis et al (2008) in Germany, United Kingdom, Denmark and Spain, Canavari et al (2005) and Gracia and Magistris (2008) in Italy, Briz and Ward (2009) in Spain, Tranter et al (2009) in European Union, Monier et al (2009) in France, Wier et al (2008) in United Kingdom and Denmark, Roitner-Schobesberger et al (2007) in Thailand, Thompson (1998), Oberholtzer et al (2005, 2006), Batte, et al (2007), Hsieh et al (2009), and Organic Trade Association (2010, 2011) in the US. These studies are either focused on a specific food or a specific type of food, i.e. dairy, fruit, meat, etc. Plus, the answers could not lead to a definitive conclusion.

Why consumers prefer organic food over conventional food and how strong such preference is for what type of food are important questions to be answered for marketing organic foods. The general perceptions vary, and different people may buy organic foods for different reasons. This may also vary by localities or geographical reasons, age, sex or ethnic groups and many others. Several studies (Botonaki et al, 2006; Kihlberg and Risvik, 2007; Zhao et al, 2007) found that consumers' preference for buying organic food is associated with taste, freshness, quality, safety and health conditions. Others (Thogerson and Olander, 2006; Onyango et al, 2007; Zhao et al, 2007) have focused more on the personal and demographic characteristics of consumers and found positive association of buying organic foods with education, income level and urban living. Cranfield et al (2009) concluded that the principal reason to buy organic foods is its nature of being free from pesticides.

Price premiums for organic foods primarily come from consumers' demand. Over the last decade, higher price for organic foods compared to their conventional counterparts have contributed to the growth of certified organic farmland and the expansion of organic food industry. One should also understand that the entire price premium does not get translated to profit as part of the price premium has to be attributed to higher cost of production of organic foods. Whichever side the price premium is coming from or to be attributed to, it undoubtedly results an increased variety of organic foods for consumers and an expectation of larger profit for producers. Contributing to both sides of the market, the price premium eventually plays

an important role in expanding the organic industry (Oberholtzer, et al., 2005). Although this is apparent, a formal proof of such anecdotal evidence is difficult due to the lack of systematic collection of price data on organic foods. Only recently, some efforts have been made to collect price data (Glaser and Thompson, 2000; Streff and Dobbs, 2004; Oberholtzer et al, 2005), which primarily include either farm-gate or wholesale prices. Studies on price premium at the retail level remain scanty. It is also likely that the price premium at retail level would be higher than wholesale or farm-gate level. Over a decade ago, Thompson (1998) rightfully concluded that insufficient data on the retail price levels of organic foods limits the estimation of price elasticities of organic food items. It is important to collect retail price data on organic foods along with comparable conventional foods to find out the actual price premium paid by the consumers as the entire organic industry is driven primarily by the demand side of the market.

Why consumers pay premium prices for organic foods was a classic question. For the last two decades, Hartman Group (2002) in the US made an effort to examine possible reasons for paying premium prices for organic foods, but their results varied over time. In 1980s and 1990s, environmental concern was the principal motivation for purchasing organic foods. Results of a similar survey a decade later, however, paint a different picture. Oberholtzer et al (2005) found that a vast majority (66%) cited health concern followed by taste (38%) and food safety (30%). Environmental concerns took a back seat trailing down to only 26 percent. Another survey conducted by Whole Foods (2004) in Canada, however, reports environmental concerns (58%) and support to small and local farmers (57%) as the principal motivation for buying organic foods. Dimitri and Oberholtzer (2009) in a recent study in the US reported education (irrespective of age, race or ethnicity) is a consistent influencer of buying organic foods. Stevens-Garmon et al (2007) found Asian and African Americans were more likely to buy organic foods. Thus, factors, such as race, education, presence of children in the household, and income are far from showing consistent effect on the likelihood of buying organic foods. Hence the cause of buying organic foods paying higher prices than their conventional counterparts remains elusive.

Price level may play at least some role in today's decision of buying organic. For organic consumers in France, a marginal reduction in price does not make any impact on purchasing decisions (Monier, et al., 2009) indicating a general superiority of preference over price differential. However, people purchasing organic foods on a regular basis may be price sensitive and make choices within the organic food items based, at least to some extent, on price levels. This is a clear indication of the gap in the literature. This study is expected to fill at least some of this gap and the existence of contradiction in the literature. This will also allow us to provide a measure of the differences between stated and revealed preferences for organic foods.

The primary motivation for conducting this research came from filling up the gap in the literature and to add new findings to the body of literature on organic food sales through conventional retail stores. The specific objectives of this study are: (1) to understand consumer behavior for buying organic foods, (2) to find out the premium price consumers are to pay for organic foods, and (3) to identify reasons why consumers want to pay more for organic foods.

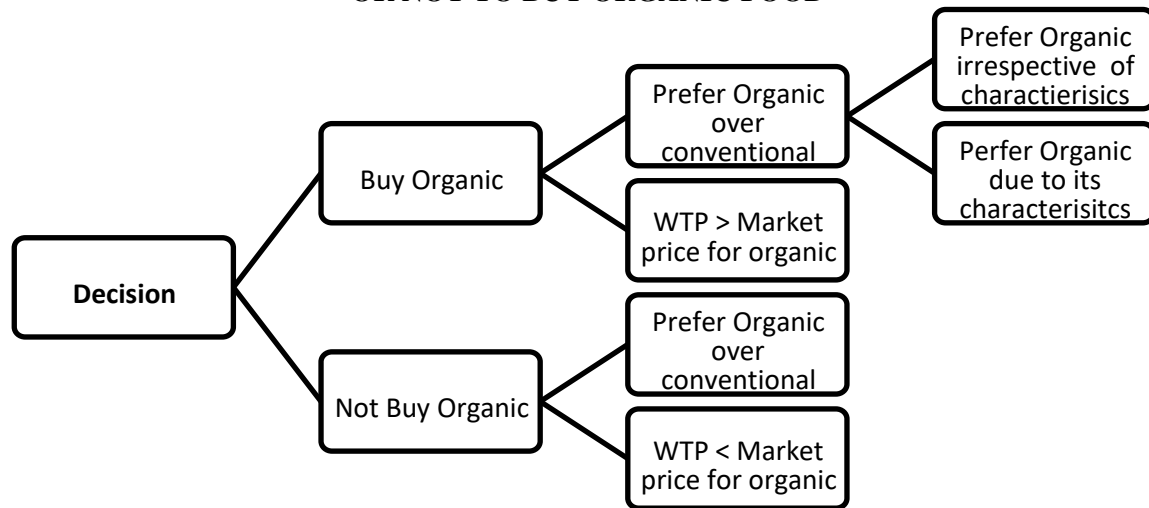
## **METHODS AND DATA**

While buying a good, the choice consumer make is directly related to their WTP for the chosen product. If a consumer's WTP is at least as much as the price charged by the seller, the consumer will end up buying the good. Otherwise, the consumer will not buy the good. While buying organic foods, a consumer has to make a two-step decision as explained in Figure 1. The consumer has to decide whether to buy organic or not. This is a dichotomous decision and depends on relative preference between organic and conventional and their relative price differential. One can assume that, everything else equal, most consumers prefer organic over conventional.

Preference alone, however, cannot lead to buying decision. The decision to buy organic requires that the consumer must prefer organic over conventional food plus the value of preference must be higher than

the premium price the consumer has to pay over conventional. Alternatively, a consumer prefers organic but the intensity of preference is not strong enough to compensate for the higher price (s)he has to pay will not buy organic. The above two scenarios are based on the assumption that all consumers prefer organic over conventional.

**FIGURE 1**  
**SCHEMATIC DIAGRAM OF THE DECISION TREE OF A CONSUMER TO BUY OR NOT TO BUY ORGANIC FOOD**



Why people prefer organic over conventional foods is still a matter of investigation (Hughner et al, 2007; Pino et al, 2012; Aygen, 2012; Van Loo et al, 2013). People choose organic foods either for their direct preference toward organic (can be explained by a dichotomous choice) or due to the affinity toward different attributes of organic foods (a relatively complex mechanism to get to the actual decision). A meta-analysis conducted by Hughner et al (2007) observed a combination of both. They identified 15 themes (they called) toward purchasing or not purchasing motives. Out of 15, nine were toward purchasing motives and six were considered deterrents. The principal themes, however, supported strong evidence toward different attributes. Health and nutritional concerns, superior taste, concern for environment, food safety, concern over animal welfare and support of local economy were the six major reasons identified to buy organic foods. High price premiums, lack of availability and skepticism of certification levels were found major deterrents. Assuming that the organic food choice is due to its different attributes, the willingness to pay premium price for organic foods maybe represented as:  $WTP = f(P, L, D, O)$ , where, WTP is the willingness to pay increased (premium price over conventional) price,  $P$  is the vector of perception variables which includes different attributes of organic food for their preference (examples maybe: organic foods are healthier, tasty, superior, environmentally friendly, contain human touch, longer shelf life, non-polluter, etc.),  $L$  represents a vector of labeling characteristics as the buyers have to find the utility of labeling and to have confidence in the labeling system,  $D$  represents a vector of demographic characteristics (age, education, family size, ethnic origin, etc.), and  $O$  is a vector of all other attributes not included in  $P$ ,  $L$  and  $D$  vectors.

In order to address the three objectives stated earlier, data on consumers' purchasing behavior and pricing information are necessary. For the first objective, data on numerical values on willingness to pay, consumers' perception on different attributes of organic food, different labeling characteristics, and demographic information of consumers are necessary. This requires a first-hand survey data from

consumers. For the second objective, data on pricing information is necessary that has to be obtained from the retail sales outlets. The third objective can be addressed either by direct observation or by analytical reasoning. The data gathering and estimation procedures are provided in the next section.

## **DATA GATHERING AND ESTIMATION**

This study began with collection and review of relevant literature on the demand side of organic food market, which allowed us to frame the questions of the study and refined the information needed to come up with an analysis and conclusion. Accordingly, a detailed questionnaire was developed and pre-tested. The questionnaire was filled up through interview of randomly selected consumers following similar approach used by Cranfield et al (2009) in Canada, Batte et al (2007) in US and Canavari et al (2005) in Italy.

The two aspects of data gathering were the collection of consumers' perception and WTP data for organic foods, and comparative price data for a set of organic foods with their conventional counterparts. The sample was selected randomly from retail grocery shoppers by visiting retail grocery stores in Edmonton, Alberta, Canada. Five conventional grocery stores – Sobeys, Save-On Foods, Superstores, Safeway and Wal-Mart were approached for allowing us to interview their customers and to record the weekly prices of certain items. These stores constitute major grocery outlets in the city. The stores were assured that the raw prices or comparative prices among different stores would not be published or disclosed to anyone. Only the normalized and aggregate prices of different food groups would be reported. After repeated requests and with sufficient assurance that the findings would only be used for research purposes and would not be released to anyone, Safeway and Wal-Mart refused to cooperate. Sobeys, Save-On Foods and Superstores cooperated in allowing us to record their weekly prices and to interview their customers in their respective premises.

For interview, randomly selected shoppers were individually approached. They were provided with sufficient information on the purpose and the procedure of the data collection. The interviewer, a Research Assistant for the project, signed a confidentiality agreement with the Investigator (author) that he will not disclose any information to anyone without prior permission. The appeal used in the cover letter was mostly of altruistic type reminding the respondents that their participation in this interview process would make a significant contribution to this research project. They were also assured that they would remain anonymous as no personal information was collected. The project received approval from Grant MacEwan University Research Ethics Board before interviewing people. The interviewer carried a picture identity card and the communicating information of the Investigator. The respondents were also told that their participation was completely voluntary and could withdraw at any time they feel necessary. At the very end of the interview process, they were thanked for their participation, and as a show of thanks, they were asked to provide their names and telephone numbers on a card to enter into a draw for a dinner for two (a \$60.00 gift certificate) at a local area restaurant. The odds of winning were one in one hundred. On average, with a 60% refusal rate, a total of 646 survey forms were completed from randomly selected shoppers from three different store premises.

The survey instrument consisted of three sections. The first section includes general introduction of organic food, consumers shopping habits, perception about organic foods and reasons for preferring organic over conventional food items. The six categories of organic foods, (a) fresh fruits, (b) fresh vegetables, (c) milk and dairy, (d) breads, grains and cereal products, (e) packaged and prepared foods, and (f) fresh meat/fish/poultry are included. The second section has more in-depth questions on WTP premium price for organic foods over conventional foods. A closed-ended iterative bidding process of contingent valuation technique is employed to identify perceived premium price for organic foods over conventional foods. This part also contains questions on the confidence on the labeling system and its impact on the choice of organic foods. The third section of the questionnaire collects demographic information, including age, education, ethnic origin, income level, marital status, presence of children in the household, etc.

The retail price data for selected organic food items along with their conventional counterparts for a period of seven consecutive weeks were collected from the three retail grocery stores. The number of items for which the price data were recorded varied from 45 to 90. Such price data were organized into 13 different categories, and for comparability, converted to near-identical units – 100 g or 100 ml for solid and liquid items, respectively. The food categories and the items included into the category are presented in the list below:

1. Fresh fruits – Apples, bananas, oranges, grapes, pears, kiwis, cantaloupes, honeydew melons, watermelons, strawberries, blueberries, raspberries, mangoes, etc.
2. Fresh vegetables – Carrots, green onions, sweet potatoes, cauliflower, celery, romaine lettuce, avocado, white mushrooms, tomatoes, squash, onions, garlics, yams, red potatoes, broccoli, beet bunches, cilantro, head of lettuce, green pepper, yellow pepper, zucchini, English cucumber, etc.
3. Dry snacks and crackers – Crackers, chocolate chips, walnut crumbs, cashews, pumpkin seeds, sunflower seeds, popcorn, crystalized ginger, sultan raisins, chocolate almonds, soy nuts, trail mix, fruit and nut mix, almond, popcorn, banana chips, etc.
4. Rice, wheat and pasta – pasta, rice, flour, etc.
5. Breakfast cereals – cereals, oatmeal, bread, pancake mix, granola, etc.
6. Sugar, syrup, honey – syrup, sugar, honey, etc.
7. Tea and coffee – coffee and tea.
8. Canned fruits and vegetables – tomatoes, beans, peas, etc.
9. Ready-to-eat canned food – soups, broths, etc.
10. Jam, jelly, spread – preserves, peanut butter, herb paste, jam, jelly, etc.
11. Salad dressings, ketchups and sauces – pasta sauce, ketchup, salad dressing, pickles, tomato sauce, pasta sauce, mustard, etc.
12. Milk and dairy products – milk, cheese, butter, yogurt, sour cream, cottage cheese, ice cream, etc.
13. Eggs and egg products – egg, egg waffles, other egg products

The price data for each food group were aggregated following equal weightage to each item. These were then averaged for each food group. While reporting data, I'll not be mentioning the names of the stores as it was promised to the stores that raw price data will not be presented to any one, instead I'll name as Store 1, Store 2 and Store 3.

What motivates the consumers to pay premium price is still a matter of controversy. From the survey data, we examined the impact of different perceived characteristics of organic foods on the amount of WTP. Two multiple regression equations were estimated using the WTP as the dependent variable. In one equation, independent variables include all three vectors of variables – perception, labeling and demographic. In another equation, only the vector of perception variables was included. Perception variables include consumers' perception of organic food relative to conventional foods. These are: PHELT (healthier than conventional), PNUTR (more nutritious), PCHEM (chemical-free), PTASTE (more tasty), PFRESH (more fresh), PQLITY (better quality), PSUPER (superior as natural), PENV (environmentally friendly), PNPOLL (non-polluter), PSUPPO (support organic industry), PHUMT (more human touch), PLSHELF (longer shelf life) and PSLOC (support local and small farmers). The labeling variables include LINF (provide true information), LTRUST (trustworthy), LSUFF (provides sufficient information), LORIG (should include original production source), LNUTR (should include nutritional content), NTEC (be non-technical) and LEAS (easy to read and understand). The demographic vector includes FREQ (how frequently buy organic food), FSIZ (family size – number of people in the family), FU18 (number of family members under 18 years), EDN (education level – year of schooling), INC (annual income level in thousand dollar), AGE (age of the respondent), and ETHNIC (how frequently buy ethnic food).

## RESULTS AND DISCUSSION

### Consumer Behavior of Buying Organic Food

Generally, people shop at their preferred grocery stores, and they have strong preference toward their chosen grocery stores. All three stores have their own customer pool. A customer inclined toward a store will go to other stores only under strenuous circumstances even though all these stores provide similar products and sell at comparable prices. The strong preference toward a certain store is perhaps for closer distance from home, better customer service, membership for points, and many other reasons beyond the scope of this study. Whatever the case maybe, this would have negligible effect on the behavior of buying organic food as all these stores keep organic items in their shelves.

This study finds that even though two grocery stores are at the same neighborhood, some people prefer one over the other, whereas others do exactly opposite (Table 1). Why such preference exists is not clearly understood although there have been effort to find out the reasoning. Distance to residence, quality customer service, pricing differences, availability of variety, etc. have been considered possible suspects. Shoppers of certain demography may also prefer specific grocery stores for specific reasons. A vast majority of shoppers (68.4 to 84.1%) shop in grocery stores around neighborhood and may never go to any specialized organic stores (Table 1). This may be due to the fact that the survey was done on the premises of conventional grocery stores and the results obtained here maybe biased toward that. It is likely that only a small number of consumers, excluded from the survey, shop only at specialty grocery stores. However, all conventional grocery stores supply specialty organic foods either side-by-side with conventional foods or in separate sections or alleys allowing people to buy specialty food items from conventional stores. Total sales of organic foods through conventional stores grew nearly three-fold in British Columbia during the last six years (MacKinnon, 2013).

**TABLE 1**  
**SHOPPING BEHAVIOR OF CUSTOMERS (PERCENT RESPONDENTS ON FREQUENCY OF SHOPPING) AT THREE CONVENTIONAL GROCERY STORES**

Stores	Stores	Rarely 1/month	2-3/month	1/week	2-3/week	>3/week	
Store 1	Store 1	1.5	15.9	14.4	44.7	17.4	6.1
	Store 2	40.9	23.5	18.2	13.6	2.3	1.5
	Store 3	53.0	21.2	9.8	14.4	0.8	0.8
	Specialty organic store	84.1	9.8	3.8	1.5	0.8	0.0
Store 2	Store 1	40.5	23.8	16.8	14.4	4.3	0.0
	Store 2	2.2	13.5	21.1	41.6	16.8	4.9
	Store 3	54.1	29.2	6.5	9.2	0.6	0.5
	Specialty organic store	68.6	16.2	5.9	7.0	1.6	0.5
Store 3	Store 1	37.4	25.2	17.6	14.3	4.3	1.2
	Store 2	51.4	26.1	6.1	14.6	1.5	0.3
	Store 3	2.7	14.6	18.5	47.4	14.3	2.4
	Specialty organic store	77.2	12.2	5.5	3.6	1.5	0.0

It has been common notion that customers coming to conventional grocery stores for shopping likely have less preference for organic food. Those who have strong preference toward organic will likely go to specialty grocery stores, the proportion of which is expected to be very small. However, the situation has changed as majority (58%) of consumers, irrespective of socio-economic categories, buys at least some organic food (COTA, 2013). What proportion of organic foods a consumer buys depends, to a great extent,



on the type of food. Apparently, fresh fruits and vegetables are the most favorite (Table 2.). Milk and prepared foods are the items least likely to be bought organic. Among the consumers surveyed, over 65% never buy organic.

**TABLE 2**  
**PERCENT RESPONDENTS BUYING PROPORTIONS OF ORGANIC AND CONVENTIONAL**  
**FOODS OF DIFFERENT TYPES (ORGANIC/CONVENTIONAL)**

Organic/Conventional	0/100	20/80	40/60	50/50	60/40	80/20	100/0
Fresh Fruit	51.9	20.9	9.1	5.6	5.4	5.9	1.2
Fresh Vegetables	52.2	19.5	10.1	5.4	5.9	5.7	1.2
Milk / Dairy	76.8	10.1	3.4	3.1	1.4	3.3	2.0
Grains / Cereals	68.4	14.2	4.8	2.9	4.0	3.7	1.9
Prepared Foods	77.9	12.9	2.5	1.5	1.2	2.0	1.1
Meat	66.7	14.7	5.6	4.6	2.9	2.8	2.6
Average	65.6	15.4	5.9	4.0	3.5	3.9	1.7

A small number of consumers (nearly two percent) buying exclusively organic foods also shop at conventional grocery stores (Table 2), an indication of integrating organic shoppers with conventional shoppers. Conventional grocery stores are increasingly becoming more interested in organic foods. This is not only to capture the small percentage of exclusively organic shoppers but also to attract a large number of occasional organic buyers. This results a market trend of increasing involvement of conventional stores and decreasing market share of specialty organic foods. The principal motivation for increasing involvement of conventional grocery stores in organic food business is increased profit, which may either come from increased sales of organic foods to buyers of occasional organic foods or may be due to the premium prices received from organic foods, or from a combination of both. In the next section, we address the premium price consumers have to pay for organic foods while shopping at conventional grocery stores.

### **Premium Price Consumers to Pay for Organic Foods**

On average, on a retail basis, organic foods are priced at about 69% higher than conventional foods (Table 3). There were some variation in price premiums among stores but were not statistically significant. The variation among different weeks was even smaller indicating that the price premium charged by retail grocery stores is consistent, but the variation among food items was extremely wide.

**TABLE 3**  
**PREMIUM PRICE CHARGED FOR ORGANIC FOODS (IN PERCENT) IN THE THREE**  
**STORES FOR SEVEN WEEK**

Week	Store 1	Store 2	Store 3	Average
1	76.90	57.96	51.29	62.05
2	74.96	59.80	72.29	69.02
3	85.01	60.79	72.44	72.75
4	89.12	63.90	72.38	75.13
5	83.32	57.42	69.40	70.05
6	79.08	58.18	62.24	66.50
7	83.65	54.83	64.26	67.58
Average	81.72	58.98	66.33	<b>69.01</b>

The price premium seems substantive but it was not due to the demand for organic foods alone, and likely would not translate entirely to profit. Organic food production is more costly than conventional food

production as the former cannot experience economies of scale and capture the productivity benefits of chemical fertilizers, pesticides and growth hormones. McLendon (2010) suggests that the production of organic foods costs approximately 30% more due to the fact that organic farms are smaller, yield less and cost more for pest control than conventional farms. Storage, transportation and distribution costs are also likely to be higher for organic foods. Part of the price differential is perhaps due to higher margin as Lukic (2011) concluded that the higher price for organic foods are mainly due to higher input cost and higher margin.

Not all foods experience the same price premium. Among the 13 food categories studied, dry raw cereal foods ( rice, wheat and pasta), and eggs and egg products experienced the highest price premium (over 100%). The lowest price premium was experienced in tea and coffee and breakfast cereals (between 20 and 30%) (Table 4). This further reinforces the idea that the price premium is not only driven by demand. Rice, wheat and egg are conventionally produced in large firms with intensive cultivation involving modern technologies to obtain productivity gain. Organic firms on the other hand are small and cannot take advantage of economies of scale, mechanization and chemical application. Tea and coffee, on the other hand, are produced in less intensive cultivation practices and the difference in production technologies between organic and non-organic is relatively small, and as such price differential influenced by cost of production is likely small.

**TABLE 4**  
**PRICE PREMIUM (IN PERCENT) CHARGED FOR DIFFERENT CATEGORIES OF ORGANIC FOODS IN THREE STORES**

No.	Food Groups	Store 1	Store 2	Store 3	Average
1	Fresh fruits	60.71	49.31	30.05	46.69
2	Fresh vegetables	42.54	74.74	38.72	52.00
3	Dry snacks and crackers	114.58	74.22	26.69	71.83
4	Rice, wheat and pasta	151.30	123.21	98.72	124.41
5	Breakfast cereals	19.55	14.49	59.84	31.29
6	Sugar, syrup and honey	143.58	43.68	81.25	89.50
7	Tea and coffee	42.41	12.00	12.99	22.47
8	Canned fruits and vegetables	76.71	109.00	148.53	111.41
9	Ready-to-eat canned foods	89.84	39.37	37.22	55.48
10	Jam, jelly and spread	107.19	24.40	185.48	105.69
11	Salad dressings, ketchups and sauces	105.10	78.30	44.72	76.04
12	Milk and dairy products	67.60	76.64	57.14	67.13
13	Egg and egg products	155.26	87.54	89.54	110.78
Average		81.72	58.98	66.33	<b>69.01</b>

The findings of this study in price premium are consistent with other studies conducted elsewhere. Schrock (2012) observed a 64% price premium for organic brand milk in Germany over conventional private brand. Glaser and Thompson (2000) earlier reported that price premium in milk can be as high as 103%. This study shows a 69% higher price, which is similar to the studies reported above.

Although not much study has been done on the direct measure of retail price charged in grocery stores, it is well accepted fact that organic foods are to be sold at higher prices than conventional foods due to

production cost as well as consumers' WTP for higher prices. Monier et al (2009) conclude that price differentials between organic and conventional foods have minor influence on consumer behavior of buying organic foods. In their study, marginal price decrease did not contribute to price elasticities to explain the large price gap.

People's preference toward organic foods can be measured from their actual buying behavior. Only a small number of respondents (less than 2%) always buy organic foods (Table 1), and a vast majority (over 65%) never buy organic. Meat, dairy products and cereals are the types of foods people more inclined to buy organic. These are not necessarily the products where price differentials are less indicating that price plays relatively minor role in consumers' decision to buy organic, a conclusion that agrees with Monier et al (2009).

The variation of premium prices among different food groups, however, is not the same for all. For example, the premium price for jam, jelly and spread in one store is as less as 24%. For other stores, the price premium is as high as 100% (Table 4). Some other food categories though, the price premium is very close among different stores.

### Why Consumers Want to Pay More for Organic Foods

Why people choose to buy organic foods relative to their conventional counterparts is an age old question. Organic foods are usually sold at a premium price as their production costs are typically higher and economies of scale are usually absent. Many consumers still prefer organic foods despite the premium price they have to pay for organic foods. The general perception is that organic foods are superior over conventional foods. Most people strongly agree that organic foods are healthier, chemical free, environmentally friendly, and better quality (Table 5). Over fifty percent of the respondents have strong preference (ranking organic foods as 8, 9 and 10 for different attributes for organic foods) that organic foods are superior as these are chemical free and safe, and environmentally friendly. Majority also agree that buying organic supports organic industry and small local farmers.

**TABLE 5**  
**PERCENT RESPONDENTS WITH RELATIVE DEGREE OF PERCEPTION ON DIFFERENT ATTRIBUTES OF ORGANIC FOODS**

	Strongly Disagree					Strongly Agree					
	NR	1	2	3	4	5	6	7	8	9	10
Healthier than conventional foods	0.3	3.9	5.5	4.7	2.5	21.3	7.7	15.9	17.5	7.2	13.3
Have better nutritional value	0.1	5.1	4.8	5.5	3.9	21.9	8.7	13.7	16.5	6.3	13.6
Chemical-free and safe to eat	0.1	2.7	2.9	2.8	2.4	11.1	6.1	13.9	21.1	14.0	22.9
Tastier than conventional foods	1.1	5.7	5.3	3.9	3.9	25.2	9.6	11.1	14.0	7.9	12.4
Fresh	0.5	5.6	5.6	4.0	5.1	26.5	9.5	11.6	15.3	6.3	10.0
Better quality being not artificial	0.7	4.0	4.4	3.3	2.4	20.7	8.8	15.9	17.5	7.7	14.7
Natural and superior	0.3	6.1	5.3	4.4	4.1	20.3	10.0	14.1	14.5	7.9	12.9
Are environmentally friendly	0.1	2.9	2.4	2.3	2.5	10.1	7.1	15.2	22.8	13.7	20.8
do not pollute environment	0.7	3.2	2.8	3.2	3.6	15.7	8.7	13.6	20.4	11.3	16.8
Buying organic supports industry	0.3	2.4	1.5	1.7	1.9	17.2	8.8	13.7	22.7	10.4	19.5
Provide more human touch	0.8	4.9	3.7	3.3	2.8	20.8	7.3	13.3	18.5	9.1	15.3
Have longer shelf life	1.7	10.0	14.3	12.0	8.8	28.9	7.9	6.8	4.8	1.3	3.5
Support local and small farmers	1.3	2.3	1.5	1.7	1.3	10.9	5.1	14.1	23.6	14.1	24.0

People's preference toward organic foods can be measured from their actual buying behavior. Only a small number of respondents (less than 2%) always buy organic foods (Table 2), and a vast majority (over 65%) never buy organic. Meat, dairy products and cereals are the types of foods people more inclined to buy organic. Although people care less about organic fresh produce, they prefer those to be chemical free.



**TABLE 7**  
**COEFFICIENT ESTIMATES AND THEIR RESPECTIVE T-VALUES OF THE TWO**  
**REGRESSION EQUATIONS**

	Variable	Regression 1		Regression 2	
		All variables		Only perception variables	
		Coefficient	t-ratio	Coefficient	t-ratio
Perception variables	PHELT	0.52	2.02	0.59	2.29
	PNUTR	0.28	1.15	0.23	0.94
	PCHEM	0.43	1.85	0.36	1.54
	PTASTE	0.67	3.07	0.78	3.66
	PFRESH	-0.36	1.05	-0.26	1.06
	PQLITY	0.59	2.15	0.60	2.20
	PSUPER	-0.18	0.72	-0.22	0.88
	PENV	0.11	0.40	0.13	0.47
	PNPOLL	-0.17	0.69	-0.16	0.63
	PSUPPO	0.30	1.38	0.36	1.68
	PHUMT	0.46	2.14	0.43	2.01
	PLSHELF	0.10	0.54	0.09	0.51
	PSLOC	-0.06	0.31	-0.02	0.09
Labeling variables	LINF	-0.31	1.02		
	LTRUST	0.42	1.31		
	LSUFF	0.07	0.54		
	LORIG	0.56	2.35		
	LNUTR	-0.46	1.84		
	LNTEC	-0.35	1.92		
	LEAS	0.09	0.48		
Demographic variables	FREQ	-0.26	0.59		
	FSIZ	0.05	0.17		
	NU18	0.04	0.12		
	EDN	0.79	2.26		
	INC	0.07	0.07		
	AGE	-0.02	0.69		
	TENIC	-0.53	1.79		
	Constant	-2.14	0.70	-3.48	2.40
	r-square	0.31		0.29	

A second hypothesis suggests that only a small portion of consumers (approximately 2%) buys exclusively organic from conventional grocery stores, and they are the ones with high stated WTP. This hypothesis receives support from our study as just over 4% of conventional grocery shoppers showed their WTP for more than 40% premium price for organic foods. Since less than 2% conventional grocery shoppers always buy organic, it is likely that small percentage who states their WTP at least 40% more for organic food. The existing gap between organic and conventional food prices is a real reflection of the choice organic consumers make. The apparent lower stated WTP than the actual price, and the gap between the

stated WTP and revealed WTP is due to the fact that nearly absolute majority of conventional grocery shoppers do not buy organic and their WTP for organic is substantially low, which is reflected in the data.

As discussed in previous sections people choose organic foods for their affinity toward different attributes of organic foods. Although how much preferable of what attribute may vary from individual to individual, there is unquestionable agreement on the overall positive influence of these attributes. Since the question of what attribute contributes how much remains, a regression analysis using stated WTP as the dependent variable and the perception of contribution of all attributes as the dependent variable is a useful tool. Information on labeling variables and demographic characteristics of buyers may also have influence. Estimated coefficients and their respective t-values of the two regression equations – one using all variables (Reg 1) and the other using only the perception on attribute variables (Reg 2) are presented in Table 7. The r-square values are 31 and 29 percent indicating that the independent variables have the explanatory power of the dependent variable of 31 and 29 percent, respectively. Although this is not very high, it is not unusual to have such low r-squares from survey data. Nevertheless, it clearly indicates that labeling and demographic variables have little or no influence.

Out of 13 perception variables, all but four contributed positively. Among them, the contribution of PHELT, PTASTE, PQLITY and PHUMT were statistically significant. This clearly indicates that consumers have the willingness to pay more due to the fact they perceive as organic foods are healthier, tastier and higher quality than conventional foods. They also believe that organic foods have more human touch than conventional foods and they value that. The four variables contributed negatively are PFRESH, PSUPER, PNPOLL and PSLOC. But none of their input was significant indicating that the consideration of organic as fresh, superior due to natural, non-polluter, and support local and small farmers play little role on deciding peoples stated WTP. LORIG is the only labeling variable that shows a positive contribution to WTP. This states that consumers care about the origin of the organic food in their decision to pay premium price and they what that to be included in the labeling system. The only demographic variable found to have significant positive contribution is EDN, a result consisted with an earlier study conducted by Dimitri and Oberholtzer (2009) in the US. Variables contributing negatively were not statistically significant.

Organic food market is a niche market and those who buy organic pay a substantially higher premium price. Their actual payment seems considerably higher than their perceived WTP, but those who buy organic on a regular basis their perceived WTP is likely high. The apparent gap between the perceived WTP and actual payment reflected by the market price is mainly due to the involvement of non-organic buyers. Organic buyers, though small in number, likely do not show any gap between the perceived WTP and the actual price they pay as they are well-informed.

Consumers pay higher prices for certain beneficial attributes of organic foods. Common attributes motivating them to pay higher prices are: organic foods are healthier than conventional foods, organic foods are tastier than conventional foods, and organic foods are of better quality than conventional foods. Those who buy organic they also value a human-touch more than machine-made. Because organic production process involves less mechanization, human touch, and as such more cost, consumers buying organic understandably are ready to pay a reward for that.

In addition, education level of the consumers plays a significant positive role. Educated people buy more organic than non-educated. Also, consumers are more likely to buy organic if the organic food label contains origin of the product.

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