Title of Thesis: Consumer Awareness and Potential Market toward Organic Rice in Sabah, Malaysia – A Market Segmentation Perspective

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Abstract

Rice is one of the world's staple foods in most of the Asian country and most of the Asians still consume rice on a daily basis. In some Asian countries organic Rice has gone from a tiny niche to essential needs. Organic rice is relatively new and still consider as an infant industry in Malaysia. At this time, fewer people would like to purchase organic rice because its price is higher than the conventional rice. Considering the availability of abundant natural resources in Malaysia, and very few interference of natural disasters such as typhoon, the capabilities of organic production should not be a problem. An organic product demand in Malaysia has been increasing in the last few years. The increasing awareness of chemical residue hazard on the conventional method of agricultural has contributed to higher demand for the organic product in Malaysia. In this sense, this study tries to identify the consumers based on segmentation model. Consequently, explore whether there are differences among these consumer segments in terms of their personal healthy orientation, environmental responsibility and opinion toward organic rice. The data will be collected in the Kota Kinabalu Sabah Malaysia with a sample size of 206 respondents. Cluster analysis will be used to locate different consumer groups to compare their demographic characteristic, personal lifestyle, environment and agricultural awareness, benefit sought and willingness to pay for organic rice.

Keyword: Organic rice, market segmentation, willingness to pay

I. Introduction

The rapid growth of organic food market has also generated lots of interest among business and consumer, as well as academic researchers. People nowadays have also become more concern about their health, environmentally friendly and consequences attitude towards buying organic food. With the advancement of technology and the increase in knowledge had made us not only prioritize our health but also toward environment concerns for healthy and safety purposes (Shamsollahi, A, 2013). The organic product has received formal recognition as food production systems in many developed Countries because of environment degradation which contributed from unsustainable agricultural practices (Oates, L., & Cohen, M, 2009). Organic agricultural, as well as organic product, emphasizes on environmental protection and the use of natural farming techniques has become a great choice for safety consumption and environmental concern (Morgera, E et al, 2012). Certified organic agriculture is practiced in 172 countries, the total of 43.7 million hectares of agricultural land are managed organically by approximately 2.3 million farmers (IFOAM). Organic agriculture product so-called “green” or ecological friendly’s products consumption is highly acceptable as one of important contributor factor to ecological friendly and sustainable movement for the environment. Table 1.1, the global sales of organic food and drink reached 80 billion US dollars in 2014 (IFOAM).

Table 1.1 Global Organic Food Market

Department of Environment Malaysia has implemented National Environment Policy, Climate Change Policy, and National Environmental Quality Act 1974 to ensure a sustainable environment. In contrast, due to weak enforcement and customary attitudes, these laws and policies have not been properly implemented (Mohammad, N. 2011). Moreover, the agriculture system in Malaysia is characterized by high input levels of artificial fertilizer and chemical application due to lacking of knowledge in managing agricultural in a right and lawful manners (Ali, A., & Shaari, N. 2015). In 2001, Ministry of Agriculture Malaysia formed the standard and certification system for organic agriculture (Skim Organik Malaysia, SOM) based on the "Malaysian standard MS 1529:2001" to make sure that it's not Genetically Modified Organism (GMO), without harmful chemicals, such as synthetic fertilizer, pesticide, hormones; antibiotics. Sustainable agriculture and organic farming are being promoted by the government as important for the sustainable use and management of natural resources. The adoption rate of organic farming is still very low among Malaysian farmers despite the organic farming promoted by government. Malaysia registered organic agricultural farming only occupied 610 hectares, whereas 6.6 million hectares under conventional management farming (IFOAM & FiBL, 2015). Most of the organic food product sales in Malaysia retail store are mostly imported goods from other countries especially from US, Japan, Australia, New Zealand and China (Somasundram et

al, 2016). Organic products are perceived as high quality branded product because of inconsistent of local supplies. Consequently, premium price tags of organic product soar in between 100% to 300% and only affordable by a small segment of consumers who are categorized as the middle and upper-income group (La Via, G., Antonio, & Nucifora, M. D, 2002). The organic food market in Malaysia is considered low but the trend for organic food consumption and the number of consumer acceptance towards organic products is growing (Hassan, S. H.et al, 2015). Beside, the fear of consuming chemical residues has catalyzed as alternative choices for organic food consumption (Lockie, S et al, 2002). With this belief, demand for organic food products has increased globally despite double or triple its premium price compared to the price of non-organic products (Zhen, 2013).

II. Literature review

1. Organic market segment in Malaysia

Organic product considered as one of the products which are produced without the use of any synthetic inputs such as chemical fertilizer, pesticide or herbicides in any of its growth phase (Sullivan, P, 2003). A study on demographic characteristic and factor influencing purchase intention on consumers in west Malaysia has perceived organic food contain health benefits contribute as an important attributes (Ahmad et al, 2010). Estimate consumers' awareness toward organic rice in Malaysia in this study indications that external variables such as the selected socio-demographic variables like gender and race have positive connection that influence consumers' awareness towards organic. The demand for organic rice in Asia is raising, especially in the Philippines, Malaysia and Singapore and local production cannot meet the increasing demand (Ibitoye et al, 2014). The positive estimated quality elasticity show that Malaysian consumers tend to increase their demand for food quality in response to their incomes rise and the potential of organic product estimated to be worth the total of RM800 million in 2010 (Tey, Y, S, et al, 2009).

2. Willingness to pay

Willingness to pay is the maximum amount an individual is willing to sacrifice to procure a good or avoid something undesirable such as pollution (Galina ivanova, 2014). Malaysian organic consumers have significant negative relationship between consumer willingness to pay and perceived expensiveness, they claimed that organic products are overvalued and this may lead to unwillingness to pay when the price increased (HUI, C. L. 2013). To determine the total premium that an individual was willing to pay for organic product, price, household size, income, family size and female are the most vital and significant influencing factors (Radam, A et al, 2010). Ethnicity and income are found to affect the price that the respondents are willing to pay for organic product; with the Chinese and Indian respondents willing to pay more than the Malay respondents and the respondents with higher income are willing to pay more than those with lower income (Jeen Wei Ong et al. 2015).

In summary from above, the respondents' personal characteristics, attitude toward environmental and behavior on purchase intention, will affect the respondents to willingness to pay on organic food or product. Beside, most of the organic academic survey conducted in west Malaysia. Not many attempts have been made to study on consumers' socio-demographic psychological, behavior characteristic and their willingness to pay on organic rice in east Malaysia.

III. Research method

1. The objective of this study is generally to understand the attitude of east Malaysia consumers on their attitude and behavior towards buying organic rice product. These consumers are including those who have experience consuming or buying organic products and those who never purchase any organic products. The aim of this study are: report the descriptive analysis on the respondents' demographic characteristics in regard to organic products; b. examine factors that influence purchase intention of organic rice among consumers The goal of this study was to understand consumer motivations for buying organic food products so that organic producers could develop more effective strategic marketing planning. The results could be used for the marketing planning of organic food products to enable proper marketing strategies and promotion to be targeted to these groups of consumers.

2. Questionnaire design

A key element in this survey instrument design was the use of a quantitative study on east Malaysia consumers to identify characteristics and issues relevant to organic food purchase (Zepeda, L., and J. Li. 2007). These studies seek to find out the consumer extrinsic motivations in organic and local food consumption, e.g. the health, environment, agricultural, and community support. The survey instrument has been designed using "Likert categorical scale" to measure respondents' psychographic, demographic, behavior and amount of willingness to pay for organic rice. Demographic variables selected for the study followed by a discussion of the significant differences, concerning organic food product related behavior, among groups of respondents (Marreiros, C et al, 2010). Psychographic variables, study individual's concern level as to environmental issues has been found to be a useful predictor of environmentally conscious behavior, i.e. recycling behavior (Kaufmann, H. R. et al, 2012). Behavior variables, study consumer's environmentally conscious, the product or services they purchase which they believe to have a positive or a less negative impact on the environment (Ukenna, S et al,2012). Willingness to pay, the implications of the consumer in action of willing to pay premium for response to those concerns move beyond merely elimination chemical residues from produce which the concerned consumer purchase (Weaver, Robert D., and A. E. Luloff, 1992).

3. Sampling

This research is based on, convenience sampling technique a type of non-probability or non random sampling where member of the target population that meet certain practical criteria, such as easy accessibility, availability at a given time and willingness to participate (Etikan, I et al, 2016). This survey makes contact with target respondent with interview for the participation of this survey research. Data has been collected in two cities, Keningau and Kota Kinabalu. 206 copies were collected in this business research, each respondent interviewed with explaining the purpose of the research and survey conducted between 14 August 2016 and 21 August 2016.

4. Reliability and validity

The initial step on this research was use factor analysis to analyze the group similar variable into homogeneous set or create new variables (Harman, H.H, 1960). The KMO (Kaiser Mayer Olkin) statistic was tested to analyze the sampling adequacy, both overall and for each

variable (Cerny and Kaiser, 1977). KMO statistic varies range in 0 to 1. The value range below in 0.60 consider as poor quality of variable. 0.60 to 0.69 consider as mediocre, average of quality variable. The value greater than 0.7, consider good an indication of the principle component and factor analysis's variables will be useful. The factors were obtained by consumers' Demographic characteristics: gender, marriage, age, ethnicity, religion, education, employment, income and family size. Psychographic variable: personal lifestyle, eating habit, health care, environment concern, and agricultural awareness: Behavior variable; factor influence and benefits sought on organic rice product. Respondents were asked to evaluate the value from 1 to 5, their agreement with different statement. These five scales have been analyzed by a principal components analysis to extract the main dimensions on each aspect. Once factor obtain from factor analysis, reliability Cronbach's alpha analysis was used to a measure the variable reliability or internal consistency. The reliability of any given measurement refers to the extent to which it is a consistent measure of a concept, and Cronbach's alpha is one way of measuring the strength of that consistency (Tavakol, M., & Dennick, R, 2011). Reliability estimate range from 0 to 1 and the appropriateness of reliability for a test depend on the purpose of the test. Criteria of Cronback's alpha for establishing the internal consistency reliability: Excellent ($a > 0.9$), Good ($0.7 < a < 0.9$), Acceptable ($0.6 < a < 0.7$), Poor ($a < 0.5$) (Kline. Paul, 2013).

Figure 3.1 Reliability test on healthy consciousness, environment consciousness and attitude on organic rice

Type of variable	Number of variable	Cronbach's alpha
Healthy consciousness.	8	0.841
Environment consciousness.	8	0.793
Benefit sought on organic rice.	18	0.748

Figure 3.2 Reliability statistics analysis on healthy consciousness variable

Item	Cronbach's Alpha if Item Deleted	T-test analysis
Perform exercise regularly.	0.828	0.000

Stay hydrated properly.	0.828	0.000
Regular medical check-up.	0.811	0.000
Control proportion of condiment or salt when you cook or eat.	0.804	0.000
Include fruit in your daily diet.	0.800	0.000
Include vegetable in your daily diet.	0.792	0.000

Figure 3.3 Reliability statistics analysis on healthy consciousness variable

Item	Cronbach's Alpha if Item Deleted	T test analysis
Herbicide damages our ecological system.	.778	0.000
Use reusable shopping bag.	.773	0.000
The use of pesticide is necessary for agricultural farming.	.772	0.000
Garbage burning cause serious damage to environment.	.766	0.000
Synthetic fertilizer is necessary for agricultural farming.	.757	0.000
Government support for waste minimization system.	.749	0.000
Synthetic fertilizer damages the quality of soil.	.742	0.000
The use of pesticide is necessary for agricultural farming	.739	0.000

Figure 3.4 Reliability statistics analysis on healthy consciousness variable

Item	Cronbach's Alpha if Item Deleted	T test analysis
Buying local.	.755	0.000
Price satisfaction.	.745	0.000
Organic rice pricing.	.725	0.000
Organic certification.	.720	0.000
Promoted by government.	.718	0.000
Local farming.	.713	0.000
Vacuum sealing package.	.711	0.000
Organic label.	.710	0.000
Education.	.708	0.000
Environmental benefit.	.699	0.000
Disease prevention.	.696	0.000
Eating safe.	.694	0.000
Scientific evidence.	.694	0.000
Better quality.	.692	0.000

Logo value.	.687	0.000
Logo benefits.	.683	0.000
Organic label.	.681	0.000
Free from pesticide.	.680	0.000

IV. Analytical results

1 Demographic characteristic

There are 206 participants was collected in this study. The respondent of female ratio is greater than male. The proportion of female respondents (66.5%) is higher than that of male respondents (33.5%). Age, 31 to 40-year-old accounted for up to (34%), followed by 41 to 50-year-old accounted for (32.5%). Among the respondent, (64.6%) were married and (33.5%) are single. Administration occupied highest number of career distribution, executives accounted for (23.3%), followed by services provided, accounted for (20.4%), and the third is the executive or professional with the percentage of (12.1%). The highest earning monthly income is RM801to 1600, accounting for (24.8%), followed by RM2401 to 3200 accounted for (24.3%), the third is RM1600 to 2400 accounted for (23.8%). With respect to educational background, the majority are secondary students (58.7%), (26.7%) are diploma holders, and the remaining are degree (9.2%), masters (1.9%), non (1.9%), primary (1%) and PhD (0.5%).

2. Lifestyle

Figure 4.1 shows the correlation between the variables and factors obtained from the principal components analysis, lifestyles was summarized in one factor which account for 56.06% of the total variance Figure 4.3. The factor named as health care equilibrium, it shows the interest of respondent in keeping themselves in healthy lifestyle practice through practicing healthy diet, high consumption of vegetable and also fruit in daily meal, controlling condiment and salt ingestion, and regularly checking their health, sport practicing weekly and also staying hydrate properly

Figure 4.1 Factor analysis on lifestyle variable

Lifestyle	Factor 1
	Healthy concern
Vegetable intake	**.830**
Fruit intake	**.807**
Condiment or salt control	**.775**
Medical checkup	**.749**
Regular exercise	**.667**
Stay hydrate	**.645**
% of total variance	56.06%

Note: Bold values indicated higher correlation between variables and factors

3. Environment concern

In relation on environment concern, three factors were selected that explained 71.87% of the total variance respectively in figure 4.1. The first factor, Environmental conservation, is linked to variables indicating that respondent have an positive intention in reducing the effect of environmental degradation by supporting government implement waste minimization, raising awareness of outdoor burning to situation that have an negative impact toward environment and using reusable shopping bag instead of plastic bag to reduce waste. The second factor, biodiversity conservations, is related to those variables showing respondent awareness about environment damage from the negative consequences of conventional agricultural practices by applying synthetic fertilizer, herbicide and pesticide. Following, third factor sustainable farming practices through organic agriculture, and regaining the wisdom of agricultural heritage.

Figure 4.2 Factor analysis on environment concern

Environment Consciousness variables	Factor 1	Factor 2	Factor 3
	Environment conservation	Biodiversity conservation	Sustainable farming
Government support	**.904**	.375	.305
Outdoor burning	**.882**	.281	.246
Recycle	**.640**	.341	.227
Synthetic fertilizer	.462	**.883**	.318
Herbicide damage ecological system	.192	**.827**	.133
Pesticide pollutes our ground water	.543	**.763**	.433
Synthetic fertilizer necessity	.219	.251	**.910**
Pesticide necessity	.374	.284	**.904**
% of total variance	41.54%	16.01%	14.32%

Note: Bold values indicated higher correlation between variables and factors

4. Benefit sough on organic rice

Figure 4.4 shows the results of the principal components analysis carried out on factors related to respondent behavior towards organic rice purchase. The variables were group in six factors. The six factors accounted for 67.35% of the total variance. The first factor, health concern, it emphasizes on the quality, healthiness, and absence of harmful effects of organic rice products. The second factor, logo recognition, is related to organic logo, value and benefit understanding. Third factor product acceptance, refer to smaller packaging and vacuum sealing packaging for longer shelf life. Following fourth factor, organic education showed that more knowledge acquire on organic rice product and also government support. Following fifth factor, price sensitivity is related to perception of organic rice are more expensive than conventional rice. Last factor, local prosperity local farming support, knowing the sources of the product, and local

purchase, buying fresh product and reduce carbon emission.

Figure 4.3 Factor analysis on benefit sought on organic rice

Factor influence on purchasing variables	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
	Safety concern	Logo recognition	Product acceptance	Organic education	Price sensitivity	Local prosperity
Product label.	**.821**	.303	.044	.246	-.161	.082
Better quality.	**.767**	.296	.220	.121	-.176	-.178
Pesticide free.	**.765**	.352	.021	.246	-.139	.184
Eating safe.	**.731**	.239	-.090	.222	-.244	.099
Scientific evidence.	**.729**	.231	.418	-.053	.050	-.236
Environment beneficial.	**.662**	.188	.180	.052	.108	-.016
Diseases prevention.	**.652**	.142	.220	.169	.139	.080
Logo value.	.301	**.921**	.001	.143	-.076	.024
Logo benefit.	.329	**.902**	.134	.239	-.171	.006
Logo recognition.	.244	**.753**	-.103	.249	-.131	-.301
Smaller package.	.064	.059	**.805**	.121	-.038	-.013
Vacuum packaging.	.236	-.019	**.786**	.036	.150	.160
Education.	.298	.285	-.026	**.807**	-.157	-.146
Government promotion.	.103	.124	.203	**.791**	-.198	.094
Price.	.124	-.006	.230	-.259	**.796**	-.035
Price satisfaction.	-.223	-.175	-.111	-.088	**.742**	.189
Local farming.	.196	.037	.124	.172	-.051	**.800**
Local purchase.	-.163	-.170	.023	-.430	.377	**.663**
% of total variance	25.93%	11.67%	8.59%	8.31%	6.98%	5.84%

Note: Bold values indicated higher correlation between variables and factors

5. Group Segmentation

The K-means cluster analysis technique (Wagstaff, K, 2001) was used in this study to identify market segments in relation to organic rice products. Three segments were extracted from k-mean cluster analysis. Figure 4.1 Consumer's demographic characteristic (gender, marriage, ages, ethnicity, religions, education, employment, income and household member). Figure 4.2 healthy consciousness variables. Figure 4.3 environment consciousness variable and Figure 4.4 factor influence on purchasing variable was taking into account for group segmentation. The result extracted from K-means cluster analysis and market segmentation variable are show in figure 4.5. Consumers were segmented based on their lifestyles and attitude

toward environment and organic rice. Three different groups segment were indentified. 1st segment accounted for (22% middle group) of the respondent, 2nd segment accounted for (38% largest group) and 3rd segment accounted for (26% smaller group) of total respondent. Half of respondent are Sabahan and are mainly women. Most of their education attainment is still remaining in secondary school and 56% consider as lower income.

Figure 4.5 as it can refer. 1st segment the middle group 22% named as "organic buyer", type of consumer who have better understanding and perception on organic product. This group ages in average of 41.12 years old. Higher education attainment 13.12 years and also received higher paid of monthly income than any other group RM2515.07, in smaller size family 4.64 members. People within this group are more actively in practicing healthy lifestyle, showing more concern in environmental conservation aspect, biodiversity conservation aspect, sustainable farming aspect, concern about personal quality, sources of the food and healthy food diet than consumers in other group. They also receive better score in product acceptance in term of size and vacuum packaging for longer shelf life and cultural presents for festival gift giving etiquette.

2nd segment the largest group 38% is labeled as "potential consumer" who wishes to understand and obtain more knowledge regarding organic product. The respondent in the categories ages in average of 36.51 years old. Educated received total of 11.81 years, with average RM1969.62 of monthly income, with average of 5.61 of household members. Respondent in this segment maintaining balance lifestyle, and are concern little of the environment and food safety issue. They interest in organic rice product. They requested for more education acquisition of knowledge on organic rice, better understanding on organic product value and also government promotion on organic product.

The 3rd segment smallest group occupied total of 26%. The socio-demographic characteristic is similar to the second segment. This group of people received RM1141.51 of average monthly income and they're price sensitivity group. They're also showing less worried about their health equilibrium and less involved in environmental concern. The participant in this group confused the term of 'local' and 'organic'. For them the term of organic product means produced locally. Moreover, respondent in this group have negative impression toward organic rice product because they're price concern group and unsatisfied on organic rice premium pricing and most of them still consider price is the main barrier stopping them to on trying purchase organic product. Therefore this group refers as "non organic buyer".

Figure 4.4 K-Means cluster analysis on market segment

Cluster group		N= 206	Segment 1 Organic buyer (36%)	Segment 2 Potential buyers (38%)	Segment 3 Unlikely buyers (38%)	T-test Sig
Gender	Male	69	34%	35%	32%	.967
	Female	137	**66%**	**65%**	**68%**	
Marriage	Single	69	23%	33%	**49%**	.033
	Married	133	**76%**	**66%**	47%	
	Divorced	4	1%	1%	4%	
Ethnicity	Malay	46	22%	19%	28%	.638
	Sabahan	104	**46%**	**59%**	**43%**	
	Chinese	44	27%	18%	19%	
	Indian	10	3%	4%	9%	
	Others	2	3%	0%	0%	
Religions	Muslim	71	35%	30%	**40%**	.801
	Christian	96	**42%**	**57%**	38%	
	Buddhist	30	20%	10%	13%	
	Hindu	8	3%	3%	8%	
	Others	1	0%	0%	2%	
Employment	Student	11	5%	3%	9%	.001
	Housewife	23	7%	13%	15%	
	Retired	1	0%	1%	0%	
	Manual worker	18	1%	9%	19%	
	Services provider	42	22%	18%	**23%**	
	Administration	48	**23%**	**25%**	21%	
	Supervisor	23	12%	15%	4%	
	Executive	4	4%	1%	0%	
	Manager	25	18%	10%	8%	
	Business owner	7	5%	4%	0%	
	Others	4	3%	1%	2%	
Ages	Below 20	6	1%	4%	4%	.002
	21-30	41	11%	28%	21%	
	31-40	70	30%	**30%**	**45%**	
	41-50	67	**42%**	28%	26%	
	51-60	21	16%	9%	4%	
	60 above	1	0%	1%	0%	
	Mean		41.12	36.51	35.68	
	Segment 1		.000	.003	.002	

	Segment 2		.003	.000	.629	
	Segment 3		.002	.629	.000	
Education	Non	4	0%	4%	2%	.110
	Primary	2	0%	1%	2%	
	Secondary	121	**53%**	**61%**	**64%**	
	Diploma	55	28%	24%	28%	
	Degree	19	15%	9%	2%	
	Master	4	3%	1%	2%	
	PhD	1	1%	0%	0%	
	Mean		13.12	11.87	11.81	
	Segment 1		.000	.008	.012	
	Segment 2		.008	.000	.903	
	Segment 3		.012	.903	.000	
Income	Below 800	29	9%	13%	23%	.000
	801-1600	51	9%	**28%**	**42%**	
	1600-2400	49	24%	25%	21%	
	2401-3200	50	**32%**	24%	13%	
	3200-4000	17	16%	5%	2%	
	4000 above	10	8%	5%	0%	
	Mean		2515.07	1969.62	1441.51	
	Segment 1		.000	.001	.000	
	Segment 2		.001	.000	.003	
	Segment 3		.000	.003	.000	
House-hold	1~3	43	31%	18%	11%	.210
	4~6	114	**51%**	**52%**	**66%**	
	7~9	42	16%	23%	23%	
	10~12	7	1%	8%	0%	
	Mean		4.64	5.61	5.34	
	Segment 1		.000	.007	.075	
	Segment 2		.007	.000	.491	
	Segment 3		.075	.491		
Lifestyle	Healthy concern		**0.5564**	0.1770	-1.0407	.000
Environment	Environment		**0.5368**	0.2907	-1.1828	.000
Benefit sought	Biodiversity		**0.7904**	-0.1986	-0.8076	.000
	Sustainable Farming		**0.7149**	-0.2593	-0.6116	.000
	Safety concern		**0.4770**	0.2235	-0.9992	.000

Logo recognition	**0.3304**	0.1608	-0.7170	.000
Product acceptance	0.2160	-0.1603	-0.0626	.057
Education	-0.1429	**0.5344**	-0.5970	.000
Price sensitivity	0.3607	-0.6455	**0.4586**	.000
Local Prosperity	**0.6341**	-0.4810	-0.1684	.000

6 Willingness to pay

Figure 4.5 shows the correlation between the willingness to pay and factors obtained from the principal components. The result shown that Pearson correlation coefficient is positive with healthy concern, biodiversity conservation, logo recognition, local prosperity, and sustainable farming factors. It can conclude that there is a positive correlation between willingness to pay between these factor that is willingness to pay increases as the respondent are more concern and active in these five factors. Safety concern and product acceptance factors show neutral correlation between willingness to pay. Organic education and price aspect showing negative correlation between willingness to pay: the willingness to pay increase if the consumers have more understanding and price reduction on organic rice products.

Figure 4.5 Correlation on factor and willingness to pay

Factor	Pearson correlation	Sig. (2-tailed)
Healthy concern	**.246****	.000
Biodiversity concern	**.234****	.001
Logo recognition	**.202****	.004
Local Prosperity	**.172***	.014
Sustainable Farming	**.166***	.017
Environment Conservation	**.155***	.026
Safety concern	.060	.060
Product Acceptance	.010	.890
Organic recognition	-.078	.267
Price sensitivity	-.167*	.017

Figure 4.10 willingness to pay

Figure 4.7 show the actual paying amount, willingness to pay and paying extra percentage for organic rice products. The willingness to pay percentage is significantly different among all three segments. From the result, it indicated that three segments are actually showing positive attitude on purchasing organic rice. The first groups of consumers are potential organic buyer. They're willing to spend higher 33.77% over the price of conventional rice. It seem that first group of consumer are actually really appreciated the value of the organic rice product. Second segment the likely buyer group. They're willing to pay 25.95% extra on organic rice. Even the percentage of paying extra is lower than first group of consumer, but they still showing positive intention on purchasing product of organic rice. Third segment unlikely buyer, the willing to pay on this group is significant lower than other two segments. They're willing to pay a smaller premium on organic rice as much as 11.65%.

Figure 4.11 Willingness to pay for organic rice

(Mean) Willingness to pay	(Mean) Actual paying amount	(Mean) Willingness to pay amount	(Mean) Paying extra Percentage %
Segment 1 Organic buyer	29.6804	40.6203	11.2101 **(33.77%)**
Segment 2 Potential buyer	27.8172	35.0353	7.2181 **(25.95%)**
Segment 3 Non organic buyer	27.6051	30.8223	3.2172 **(11.65%)**
F-value	0.385	0.000	0.003

5. Conclusion and suggestion

The findings of this study show that health, biological concern and logo recognition have significant relationship with consumers' willingness to pay. The result further indicates that there is significant difference between age and income of consumer have positive impact on purchasing behavior of consumer towards organic rice. The involvement of government is a must, in order to obtain the confidence of consumer to purchase organic food product. The government should use education as medium of instruction for introducing organic food policies and also launch promotion on organic product through mass media in order to help improve the organic industry. Beside, organic certification promotion campaigns should be carried out by the respective government or private industries to promote the benefit offered by the organic foods and also create positive perception about organic product. With more campaigns promotion, consumers should be able to easily differentiate green products from the non green based on the labels and also change consumer's negative perception towards green products. Furthermore, there is a need for private sectors' involvement in development and production on organic product. Marketers must offer green products having good grade of quality and at affordable prices for consumers. The companies can also use tag lines such as healthier, eco-friendly and safer for your family to attract consumers towards green purchasing. Successful green marketing requires much more than simply adding an environmental attribute into a product. It is essential that marketers combine green marketing strategies into the company's strategic plan.

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