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Consumers' Willingness to Pay for Malaysian Organic Food Product

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Abstract--- *In global food market there exists a growing need for organic food and in this context country of origin is very crucial for consumers for organic food choice. The purpose of this paper is to explore the perception of consumers towards different country-of-origin organic food available in Malaysian market and their willingness-to-pay for these organic foods. Based on survey data of 330 respondents, 'principal component analyses' and 'multiple correspondence analysis' technique was applied for analyzing the data. The study finds that consumers' perception towards different country-of-origin organic logos are not homogenous and they consider OECD organic products, East-Asian organic products and Malaysian organic products as three distinct categories. But these distinctions do not necessarily translate into their willingness-to-pay. The study identifies a basis for segmenting organic food market in respect of country-of-origin that can create a new thinking among the different actors of global organic food market chain and domestic government and non-government policy makers. The study prompted a new dimension in organic food research by combining it with country-of-origin aspect.*

Keywords--- *Organic Food, Country of Origin, Willingness to Pay, Perception, Consume, Malaysia.*

I. INTRODUCTION

In global marketing and consumer behavioral research, study on country of origin (COO) effect on consumers perception and buying behavior had been in the mainstream of research agenda for about last 50 years. During this period substantial research activities were able to build a clear understanding about effects of COO, its cognitive process and its moderating and mediating factors (Thogersen et al, 2017). The 1960's researchers like Dicher (1962), Schooler (1965) and others were the pioneer to direct the researchers' interest to this direction. Most of the studies were carried on different food categories like poultry and dairy, meat, vegetables and fruits. Automotive and electronic products also got attention of researchers in COO studies. Considering the importance of COO, the US and EU has enacted mandatory COO discloser on the food product label (Berry et al., 2015). COO serves as an influential cue in evaluating products quality around the globe. Research found that consumers associate the quality and/or other

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attributes of a particular product to a specific geographical location (Andéhn et al., 2016; Insch and Florek, 2009; Ahmed et al., 2004). This is because of the image, production process they follow and the legislation of that country. For instance, in German market the countries with high competence in cheese production and cheese specialties command up to 43% premium (Schröck, 2014). COO simplifies the heuristic process of product evaluation in situations where other cues are complex to evaluate (Ahmed et al 2004). But COO effect varies depending on the product types under consideration (Balabanis and Diamantopoulos, 2004; Piron 2000, Roth and Romeo, 1992).

"Despite the growing importance of imported products in many organic food markets, only few studies have investigated the combined effect of COO and an organic label or compared consumer preferences for one vs. other" (Thogersen, 2017). Among these few studies most are product specific (Chen et al., 2015) and/or comparison between domestic vs. imported organic foods (Schjoll, 2016; Xie et al., 2016; Schrock, 2014; Fledmann and Hamm 2015). For example, Chen (2015) investigated WTP for tomatoes carrying the European Union (EU) organic label and Chinese organic label and found that WTP is significantly higher for EU organic tomatoes than Chinese alternatives among Chinese consumers. Similar comparison was conducted by Wu et al., (2014) about the infant milk carrying organic label and result shows that US organic label is most preferred among EU, Chinese and US organic label. Janseen and Hamm (2012) analyzed consumer preferences and willingness-to-pay (WTP) for different organic logos in six European countries- Czech Republic, Denmark, Germany, Italy, Switzerland and United Kingdom. Using random parameter logit model, they showed that WTP differ considerably among different organic logos.

The country of origin information of food products generally communicated through the phrase 'a product of...', or 'produced in...', 'grown in...', or by using logos indicating the origin of the product. The organic market share is very small in total food market. In Australia it is estimated to be approximately 1% (Henryks et. al., 2014) and 5.5% in United States (Organic Trade Association, 2018). Although the organic movement is pioneering in the developed countries, the demand for organic is increasing in the developing countries including Malaysia that is reflected in the rapid growth of the organic food chains. This growth may be attributed to the better understanding of the organic foods' features and benefits among the Malaysian consumers (Wong and Aini, 2017). The United Nation's report on 'World Economic Situation and Prospects 2018' identifies Malaysia as upper middle income country according to per-capita GNI (UN, 2018). With this increased GNI, Malaysians are now more conscious about their food and lifestyle choice. The growing demand for organic food in Malaysia is more than the local production (Mohamad et. al., 2014; Ahmad et. al., 2008) and about 60% of organic food products are imported (Somasundram et al., 2016). About 70% of the organic food products is distributed through specialized organic food stores and supermarket chains and the balance is distributed through traditional retail shops, wet-markets or home deliveries (Stanton et al., 2011, as cited in Rezai et al., 2014, Phuah et al., 2015). Most of the organic fruits and vegetables are imported from Australia, Newzelland, China, Korea and Japan (Tiraieyari et al., 2014). Hence different country of origin organic products carrying different organic logos are available in Malaysian market and our real market observation also found these logos in organic outlets. We selected about 10 such logos for this study. Previous studies on organic food in Malaysia are concentrated on consumer perception, exploring factors and analyzing demographics. On the other hand, COO study in Malaysia on imported food items are very few. In this sense it is the pioneering study in Malaysia as it

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combines effects of organic and COO. Therefore, the current research investigates Malaysians consumers' perception on different country of origin organic logos and its effect on their willingness to pay (WTP).

II. MATERIAL AND METHODS

A. Data Gathering

The study is based on the partial data gathered for a comprehensive study on organic vegetables and fruits and willingness-to-pay. The study was conducted through June 14 to August 14 of 2014. The 'Institute for Environment and Development' (LESTARI) of the National University of Malaysia (UKM) arranged the data collection under a project grant of the university. In this study self-selection purposive type sampling has been used (Hathaway et al., 2010; Robinson O C, 2014). The study was conducted among the citizen of Kualalumpur and some urban area of Selangor state of Malaysia. The cities in this survey include Kualalumpur, Putrajaya, Kajang, and Bangi. About 500 questionnaires were distributed. Among those 342 returned. The response rate was 68.4% with 330 useable questionnaires. The respondents who reside near the organic shop or super shop selling organic product were selected for getting response. Some questionnaires were distributed and then collected, and some data gathered through face to face interview. The participants were minimum adolescent and were solely or jointly responsible for the family's grocery shopping. Respondents were described the purpose of the survey and asked whether they know about organic product or not. Those who replied positively subsequently they were provided the questionnaire to answer if they agreed to participate in the survey. The demographic data is shown in the Appendix- A. The questionnaire items were divided into three parts; demographic, familiarity with organic logos and WTP. Demographic section included gender, age, marital status, nationality, ethnicity, occupation, place of residence, education, family size and income range. 'Familiarity with organic logos' section included ten dichotomous choice questionnaires with a pictorial presentation of ten organic logos including one regional logo (EU) and IFOAM logo (Figure-1). The logos under study were two Malaysian organic logos, two Australian organic logos, and one from each of USA, Newzelland, China and Japan. Although the IFOAM and EU organic logos are not from any specific country, we included them in this study because we want to know about whether the Malaysians are familiar with these two logos. In our subsequent analysis these two logos eventually dropped as they fail to form any component. Respondents were to choose either of the two options 'familiar' or 'not familiar' with the corresponding organic logo.

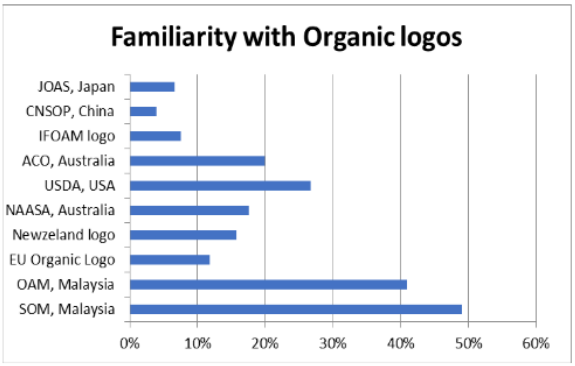

Fig. 1: Domestic Rrganic Logos Followed by USDA

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In WTP section the respondents were asked six 5-point likert scale questions (1= strongly disagree and 5= strongly agree). The items are given in appendix- B. To suit the respondents with less proficiency in English language, a Bahasa Melayu (Malay language) version was also developed and used in the survey.

B. Analysis and Results

The study consists of three analytical steps. Step 1 is the summary of demographics and simple presentation of the status of organic logos among Malaysian consumers. Step 2 consists of principle component analysis (PCA) and multiple correspondence analysis (MCA) to visualize if there exists any similarities or hidden group among the variables. In addition of the continuous variable, PCA can be applied on binary and categorical variables if we consider the component as a latent factor (Lee, 2010; Takane & Leeuw, 1987; Kamata & Bauer, 2008; Ttnphns, 2017; Flounderer, 2015.) In step 3 a Pearson correlation matrix is constructed based on the composite scores of the 3 COO categories and WTP following the method suggested by Song et al. (Song et al., 2013; Landgraf, & Lee, 2015). The analyses were done with the help of Microsoft excel 2013 for step 1 and SPSS version 21 for step 2 and 3.

The demography of the respondents is shown in appendix- A and the summary of the familiarity of organic logos are shown in figure- 2. Malaysians are most familiar to the domestic organic logos followed by USDA logo, Australian logos, New Zeeland logo and EU organic logo. China organic logo is less familiar.

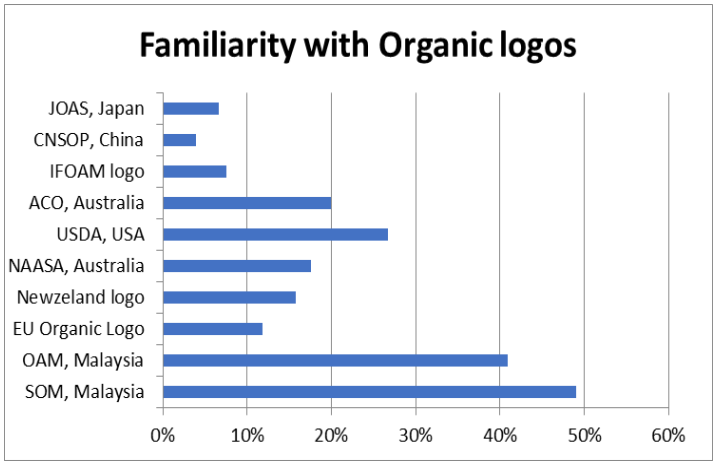

Fig. 1: Familiarity of 10 Different Organic Logos among Malaysian Consumers

C. Principal Component Analysis and Multiple Correspondence Analysis

Principle component analysis (PCA) divided the 'organic logos' into 3 components dropping out 2 variables. The 2 variables are IFOAM logo and EU logo. As noted earlier these 2 logos are not from any specific country and failed to construct any component. The logos of Australia, Newzelland and USA constructed the first component, the logos of Japan and China constructed the second and the Malaysian organic logos constructed the third component. We named these three components as 'OECD COO', 'East Asian COO' and 'Malaysian COO' respectively. All variables of willingness-to-pay (WTP) constructed a single component with appropriate loadings and other indices. The items to measure the WTP is given in appendix-B. The variables and their loadings on each component, communality, percentage of variance explained, Eigen value and cronbach's coefficient have been shown in Table 1.

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Table 1: Result of Principal Component Analysis

Factor Name	Item	Item Loading	Communality	% of Variance (Cumulative)	Eigen Value	Cronbach's Coefficient
WTP	WTP5	0.882	0.786	30.741 (30.741)	4.304	0.918
	WTP3	0.864	0.75			
	WTP4	0.857	0.741			
	WTP2	0.851	0.742			
	WTP6	0.825	0.688			
	WTP1	0.77	0.593			
OECD Organic Logos	Know_ACO	0.849	0.768	20.357 (51.097)	2.85	0.847
	Know_NAASAlogo	0.833	0.754			
	Know_NZlogo	0.802	0.682			
	Know_USDAlogo	0.746	0.581			
Japan & China Organic Logos	Know_CNSOP	0.898	0.844	11.432 (62.530)	1.601	0.761
	Know_JOAS	0.831	0.812			
Malaysian Organic Logos	Know_SOM	0.836	0.752	10.512 (73.042)	1.472	0.646
	Know_OAM	0.817	0.732			

III. DISCUSSION

As today's consumers are becoming increasingly more conscious about the origin of their foods and the ingredients the food contains, our findings have academic and business importance as it reflects the inner feelings of Malaysian consumers through the identification of COO. The findings indicate that responses towards the different organic logos followed a specific pattern that reflects the image in the mind of the Malaysian consumers about different country-of-origin organic logos. Principle component analysis (PCA) splits the organic logos into three components indicating Malaysian consumers grouped the logos into three categories, i.e. The OECD COO, East Asian COO and Malaysian COO (Figure-3). We got almost same grouping of organic logos, conducting a multiple corrospondence analysia (MCA) (Figure-4). This evidence suggests that perceptions of different COO are not homogenous. The logos fall in the same group are different from the other groups. However, this finding does not explain the reasons of why Malaysian consumers view these different country of origin logos differently.

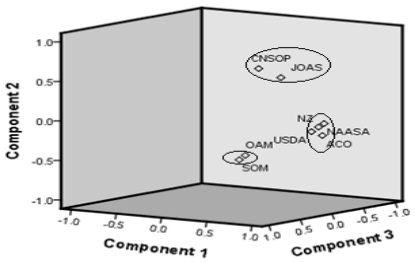

Fig. 3: Component Plots of Organic Logos

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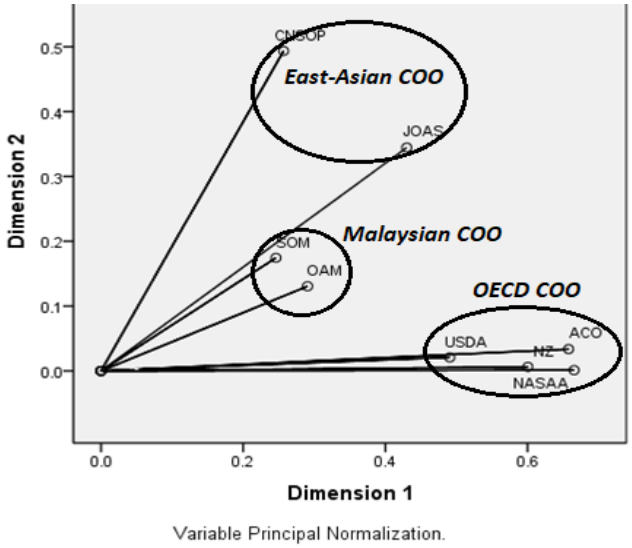

Fig. 4: Discriminant Measure of Multiple Correspondence Analysis

Following this distinction among COO groups, we can attempt to find out the common characteristics of the countries falling in the same group. The OECD group can be characterised as the countries Malaysian trust most for their strong legislation of organic agriculture and appropriate implementation of organic practices. The consumers believe that the products from these countries actually complied with the organic standards. They are also confident that the producers and other actors of the supply chain are following the production and business ethics and all information related to organic products is revealed in the product label (Dardak et al, 2009). In matter of East-Asian COO, it is believed that in China and Japan there are some ethnic group who traditionally produce harbal and functional plants through a indigenous method of agriculture and consume regularly. Regulatory intervention is not necessary to compell them to practice this tradition. Probably this belief has been transferred to the organic products originating from these countries. Cultural similarities might be the another factor that bind the East-Asian COO in a single category.The distinction of Malaysian organic products can be characterized as lesser quality compared to others (Lew and Sulaiman, 2014). There is a lack of trust among Malaysian consumers in matter of quality standard of organic products even with government certification efforts. It seems that ethnocentrism is less effective in food choice, compromizing the quality standard in today's globalized world espicially in developing countries like Malaysia. This perception grew due to consumer's negative product experiences of locally made products (Noor, 2005). But the scenerio is changing as the Malaysian producers are now being more concious about the quality of the local products to compete with the foreign products in local market.

The correlation result suggests that (Table-2) there is a significant negative correlation exists between the familiarity of Malaysian organic products and WTP and between OECD organic products and WTP. However, there is no correlation between East-Asian organic products and WTP. The Malaysians who are more familiar with the organic products originating from OECD countries as well as home countryare less likely to pay more and vice-varsa. Supirior quality of OECD organic products do not ensure higher WTP. The availability of organic products of OECD COO in the market make us believe that a group of consumers of urban area usually buy OECD products but general

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consumers do not support higher WTP of OECD products. WTP depends not only on the COO of the products but also on some other factors like affodability, convenience, subjective norms, food miles etc. In matter of Malaysian organic products, WTP also negatively correlated with Malaysian COO. Malaysian consumers have lack of confidence on the Malaysian organic food producers that they are actually following the organic standards. They have also lack of trust on the regulatory agencies that they are actually following the proper varification process. Anselmsson et al, (2014), Gao et al, (2014), and Loureiro and Umberger (2003) observed the similar finding in matter of country of origin labeling in other countries. On the contrary our finding differs from the finding of Ehmke, Lusk, and Tyner (2006) who found that consumer prefer food from their own country.

Table 2: Correlation matrix of OECD, East-Asian and Malaysian COO and WTP

	Malaysian	**EAsian**	**OECD**	**WTP**
Malaysian	1	.240**	.404**	-.135*
EAsian		1	.416**	.067
OECD			1	-.125*
WTP				1
** Significant at .01 (2 tailed). Significant at .05 (2 tailed)				

Table 3: Demographic Characteristics of the Respondents

		n	**%**				**n**	**%**
Gender	Male	110	33.33%		Place of Residence	Kajang	89	26.97%
	Female	220	66.67%			Bangi	58	17.58%
Age (M = 35)	18 - 27	75	22.73%			Putrajaya	40	12.12%
	28 - 37	150	45.45%			Kualalumpur	88	26.67%
	38 - 47	60	18.18%			Others	55	16.67%
	48 - 57	29	8.79%		Education	Primary	11	3.33%
	58- 67	16	4.85%			Secondary	67	20.30%
Marital status	Single	129	39.09%			Diploma	41	12.42%
	Married	192	58.18%			Graduate	80	24.24%
	Divorced	6	1.82%			Post-graduate	131	39.70%
	Widowed	3	0.91%		Family Size	1 to 3	124	37.58%
Nationality	Malaysian	323	97.88%			4 to 6	152	46.06%
	Others	7	2.12%			7 to 9	42	12.73%
Ethnic	Melayu	230	69.70%			10 to12	12	3.64%
	Chinese	35	10.61%		Monthly Income	Less than RM 3000	182	55.15%
	Indian	28	8.48%			RM 3001 - RM 10000	126	38.18%
	Others	37	11.21%			RM 10001 - RM 20000	22	6.67%
Occupation	University Teacher	75	22.73%					
	Govt. Job	70	21.21%					
	Private Job	112	33.94%					
	Self Employed	44	13.33%					
	Others	29	8.79%					

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Table 4: Questions for measuring WTP

Coding	Questions
WTP1	I am willing to purchase organic food even if the price is higher.
WTP2	I am willing to buy organic vegetables and fruits even though choices are limited.
WTP3	I would still buy organic vegetables and fruits even though conventional alternatives are on sale.
WTP4	Buying organic vegetables and fruits is the right thing to do even if they cost more.
WTP5	I am willing to buy organic vegetables and fruits because the benefits I get are more than the cost I pay.
WTP6	I do not mind spending more time sourcing for organic vegetables and fruits.

This finding partially supports the findings of Janssen and Hamm (2012) and Magistris & Gracia (2012) that WTP differ considerably between different organic logos and paying attention to organic labeling influences the intention to purchase organic food. Both studies were conducted in European countries. They suggested that well-known organic certification logos have a positive correlation with higher WTP. This difference in findings may be attributed to the difference in consumer characteristics and lifestyle of developed and developing countries. In an extensive literature review Newman et al. (2014) mensioned that "domestic food is mostly perceived to be safer and of higher quality, evaluated more positively and preferred more than imported food but these effects are occationally reversed in poorer and less developed countries". In China similar study (Walley et al 2014) suggest that food originating from overseas is perceived to be of higher quality than food originating from China and the Chinese consumers do not see food originating overseas as all the same but relate quality to the country from which it originates.

Although this COO study on organic food is pioneering in Malaysia, this study may lay some scope of critics. Firstly, this study is not based on actual or controlled market condition rather the respondents provided their opinions seeing the organic logos in the questionnaire. Secondly it may lack representativeness for the whole Malaysia as the study was conducted in the Federal Territory of Malaysia ignoring the other provicial cities due to cost constraints. Another limitation is that the findings are based on self-reports and people may not actually do what they say they are doing.

IV. CONCLUSIONS

Malaysia offer significant market potentials for organic food. As noted earlier that the combined effect of COO and organic food is a barren area of research and this is especially true in the context of developing countries like Malaysia where both study on COO and organic products has a number of issues yet to be addressed by the researchers. Despite some limitations the study has generated a new dimension of COO study regarding organic food market of Malaysia. Specifically, Malaysian organic food market may be segmented into 3 categories based on country-of-origin: OECD, East Asia and Malaysian COO. These segmentations may very well represent an opportunity for the overseas food producers, but these segmentations should carefully analyze before marketing of organic food because the effective monetary WTP for these categories are yet to be confirmed. Although Malaysians are more familiar with domestic organic logos, they hold a different approach to foreign organic logos, and they see OECD organic logos, East-Asian organic logos and Malaysian organic logos as three distinct categories; but this distinct categorization do not necessarily translate into higher WTP. Our findings may derive new thinking from the

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part of different actors of global organic food market to seek competitive advantages. It also has an implication in formulating product labeling strategy and designing appropriate marketing policy including advertising for organic food.

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