

# Discovering Niche Market: Consumer Preferences and Willingness to Pay for Organic Pork

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With the concern for environmental quality and food safety, organic food products are becoming more important in the global market. In recent years the organic food industry has been expanding and sales of organic products have been increasing. Abundant studies have been done focusing on organic fruits and vegetables which focused on the shortage of organic live stocks. In this paper we focus our attention on organic pork products. Using a sample of 400 Thais consumers, this study proposes the contingent valuation (CV) technique to measure the willingness of individuals to pay a price premium for organic pork in Thailand. In order to obtain the mean “willingness to pay” (WTP), a bivariate probit model was applied to provide information about the crucial variables that affect the WTP. The study revealed that variables that better approximate WTP are based on the lifestyle and knowledge about organic foods rather than the usual socioeconomic factors. The mean WTP on the premium price for organic pork is approximately 34.30 Bath per kg. In order to access the market potential this study shows that the suitable attributes of organic pork which is consistent with consumer preferences are composed of modernized and environmental packaging with special product details. Marketing this product to the buyer it should be set at a reasonable price. Stimulating the market should be done by doing sales promotion and public relations on a regularly basis. In addition, organic pork should be available in any places and convenient for customers to buy.

*Keywords:* organic pork, willingness to pay, bivariate probit model, consumer preferences

## Introduction

In the 21st century, the production of food, sustainability of safe quality, and consumption are some of the major important issues that people are highly concerned with (Gunduz & Bayramoglu, 2011). Consumers not only worry about their health but also about environmental protection, food culture, and animal welfare. This situation has been significant especially in the demand for organic foods.

Over the last few years, the organic food industry had been a dramatic growing segment of the world economy. The 3rd edition of the *Global Organic Food And Drink Market*, as reported by the Organic Monitor, indicated that after several years of double-digit growth, the global market for organic food and drink has expanded to five percent in 2009. In the U.S., the report from the Organic Trade Association (OTA) shows that in

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2009 organic product sales grew by 5.3 percent overall, which is estimated to be worth about \$26.6 billion. Of that figure, \$24.8 billion represented organic food. In India, the organic food market in 2010 was worth \$129.3 million. In Spain, the turnover of organic foods and beverages was approximately 905 million Euros and the export of organic products amounted to 454 million Euros in 2009.

In Thailand, with the concern for environmental quality and food safety, many consumers made an increasing demand for food safety (Roitner-Schobesberger, Darnhofer, Somsook, & Vogl, 2008). The number also demonstrated a rise in many places for selling organic products. However, the features of overall market of food safety, especially in organic food, illustrated that it is still in the introduction stage—the productions and sales are relatively small when they are compared to conventional products. The major consumers have not purchased organic food regularly, even though they have serious concerns about health hazard. The market of organic food in Thailand is a niche market which is primarily sold in specialty stores.

There has been a number of studies carried out to investigate the demand of Thais for organic foods. The studies were conducted to obtain a better understanding of the motivations behind organic consumption as well as on the perceptions and attitudes of these consumers. Most of the studies focused on fruits and vegetables. Very few have been done to understand the demand for organic livestock which is another important part in the food market.

The market and demand for livestock products are growing, especially on pork product. Statistics from the Office of Agricultural Economics show that in 2010 the domestic demand for pork products was approximately 11.61 million Baht; this was an increase of 5% in 0.93 million tons from the previous year. This provides a great opportunity for marketing organic pork as organic pig farming is rising in popularity among small-scale farms in many provinces of Thailand.

It is quite clear that the future of organic sector is depending on consumer demand and their motive for paying extra price (Lockie, Lyons, Lawrence, & Mummery, 2002; Aryal, Chauhary, Pandit, & Sharma, 2009) thus a clear understanding of the demand for organic pork and the underlying motivation to purchase organic pork instead of conventional ones will be very useful for the farmers and retailers in order to improve products and implement an effective and successful marketing strategy that corresponds to the consumers' demand. Therefore, the purpose of this study is the following:

- to estimate consumers' willingness to pay (WTP) for organic pork;
- to explore factors influencing consumers' willingness to pay;
- to identify the product attributes that consistent with consumer preferences.

The results of this study will have a rich implication for producers, marketer and government as well. The remainder of this paper is organized as followed: Section 2 presents a review of literature. Section 3 provides the model. Section 4 describes the data and methodology. Section 5 reports the empirical results. Finally, concluding remarks are drawn in section 6.

### **Literature Review**

Numerous studies in different countries have been conducted on consumers and organic markets that include a range of issues such as consumer awareness and knowledge about organic foods, market potential, consumers preference, consumer attitude and perception and consumers' willingness to pay. In our paper we

focus on the studies of demand on organic foods which is analyzed by consumers' willingness to pay.

The examples of recent studies focusing on WTP for organics compose of Williams and Hammit (2000), Corsi and Novelli (2002), Loureiro and Hine (2001), Loureiro and Lotade (2005), Hearne and Volcan (2005), Durham and Andrade (2005), Christensen, Hasler, Lundhede, Mørkbak, Christoffersen, and Porsbo (2006) as well as Gunduz and Bayramoglu (2011).

Economic studies of potential demand for organic foods generally examine which factors influence consumers' willingness to pay a premium for the alternative products (Durham & Andrade, 2005). All of these studies generally incorporate socio-demographic characteristics such as gender, income, children, residence and education.

Thompson (1998) compared different studies of consumer demand for organic products conducted in USA. He concluded that socio-demographic characteristics such as age, marital status, number and age of children and education are important variables in explaining consumer demand for organic foods. Many studies suggest that the typical organic household is a younger one in which females do the shopping, and that smaller and higher income households are the most likely purchasers of organic produce (Govindasamy & Italia, 1999). For income, the variable is usually found significant in estimating WTP for organic products. Most studies have found that willingness to pay increases as income increases (Jordan & Elnagheeb, 1991; Van Ravenswaay & Hoehn, 1991). However, conflicting findings have been reported as some studies have also found that food safety concerns decreases as income increases (Buzby, Ready, & Skees, 1995; Byrne, Gempesaw, & Toensmeyer, 1991; Jussaume & Judson, 1992).

For the identified reasons behind the increasing of consumers' demand for organic goods, some studies suggest that the main motivation for purchasing organic and natural products derives from health reasons (Huang, 1993; Bourn & Prescott, 2002; Wier, Hansen, & Smed, 2001). Numerous studies have shown that there is a widespread belief that organic foods are substantially healthier and safer than traditional food which brings organic goods at price premiums (Gil, Gracia, & Sanchez, 2000; Magnusson, Arvola, Hursti, Aberg, & Sjoden, 2001; Roitner-Schobesberger et al., 2008; Tsakiridou, Boutsouki, Zotos, & Mattas, 2008). In addition environmental concerns are also important stimulators of purchasing organic produce (Owen et al., 2000; Sloof, Tijsskens, & Wilkinson, 1996; Hamm, Gronefeld, & Halpin, 2002). Apart from the health-related reasons and environmental concerns, the preference for better taste, being fond of homegrown produce, and consideration for quality have been some of the key motivators for buying organic food (Alvensleben & Altmann, 1987; Underhill & Figueroa, 1996; Thompson & Kidwell, 1998).

In addition, many studies suggest that the main abstractions in purchasing organic foods are composed of high price premiums, poor availability and lack of information, and a lack of trust in organic certification schemes and quality (Thompson, 1998; Wier et al., 2001).

### **Data and Methodology**

During August and November in 2010, the contingent valuation analysis was conducted with 400 observations in Chiang Mai Province (Chiang Mai is the biggest province in Northern Thailand). Respondents were randomly approached at three supermarkets that were selected at a variety of different locations to ensure that a range of customer types were included in this study.

First of all, we focused on the “bid design” which is an important part for the contingent valuation technique in order to get efficiency estimators. We conducted a pilot study with open-ended questions to determine the initial bids. After received the information about the attributes of organic pork from the interviewer the respondents were asked directly about the maximum price premium that they were willing to pay at a premium price for organic pork per kg. After all this piloting, we used the most frequently occurring WTP price premium of 8 Baht, 15 Baht, 20 Baht and 25 Baht as starting bids.

A final survey was conducted during October and November of 2010. Respondents were randomly asked for voluntary participation in a face-to-face survey and they were distributed randomly among these four starting bids. Respondents were asked questions composing of three sections. Section 1: After receiving the information through an interview attributes of organic pork were compared with traditional pork. The respondents were asked to consider the WTP question in a doubled bounded dichotomous-choice format with a follow-up. The first question asked to the respondent was whether he would (or not) be willing to pay a certain price premium (the bid) for organic pork per kg. If the respondents agreed to pay the offered bid the follow-up bid is doubled on the other hand if the respondents refuse they were offered a bid that is half of its initial bid. Section 2: The questions in this part were related to the organic purchase behavior, perception and knowledge about organic products and socioeconomic characteristics. In the last section, respondents completed a survey that elicited information about attributes of organic pork that corresponded with their preferences which included product, price, place and promotion.

### **The Model**

The contingent valuation method (CVM), a survey-based approach, was propounded in a theory by S.V Ciriacy-Wantrup in 1947; however, Davis (1963) was the first who use the CVM empirically. Due to its flexibility and proficiency, this technique is one of the most widely used for researchers and policy makers in order to elicit consumers’ valuations of non-market commodities such as recreation, health care and environment (Jakobsson & Dragun, 1996).

CVM allows a direct estimation of willingness to pay by means of different techniques including open-ended question (continuous format), bidding game, payment card and dichotomous or referendum format. In the open ended format respondents were asked to identify their willingness to pay without being given a starting bid level. Respondents were inquired on “How much money are they willing to pay for?”, Mitchell and Carson (1989) found that this method provides large number of no responses, zero answers and outliers. The bidding game offers a sequence of bid to the respondent. When the respondents refuse to pay a particular bid the game stops and the WTP can be elicited.

Another technique is a payment card approach. In this approach, the respondents are asked to select the amount in WTP from a checklist of possible payment either in absolute value or as a percentage of prices (Boccaletti & Nardella, 2000; Lacaze, Rodriguez, & Lupin, 2009). The payment card approach can be employed for small sample sizes. However Wang and Whittington (2005) noted that respondents may easily be confused if a survey is not designed very carefully.

In the dichotomous or referendum format, there are single bounded, doubled bounded or multiply bounded

that is depended on the number of times to question. The single bounded approach was pioneered by Bishop and Heberlein (1979). The correspondents are asked whether they would be willing to pay a single price for goods. The expected answer was either a “yes” or “no” to that amount. This question is relatively easy to answer but it provides a limited amount of information about WTP.

Many studies have suggested that respondents in contingent valuation studies may have a range of economic value or a valuation distribution in their mind rather than a single point value (e.g., Cameron & Quiggim, 1994; Dubourg, Jones-Lee, & Loomes, 1994) so that the doubled bounded or multiple bounded dichotomous choice are more appropriate because an iteration of the discrete choice question provides more information.

The doubled bounded format proposed by Hanemann (1984) was first applied by Carson and Steinberg (1990), and Hanemann, Loomis, and Kanninen (1991). In this approach, respondents are presented with a follow-up question in addition to the first question. For example, if respondents answers “yes” to the willingness to pay question for \$ $X$ , the next question might ask whether the respondents are willing to pay \$ $Y$  (typically  $Y > X$ ) on the other hand, if respondents answer “no”, the next question might ask whether the respondents are willing to pay \$ $Z$  (typically  $Z < X$ ) (see Figure 1). This questioning strategy has also been called a doubled bounded referendum approach (Cameron & Quiggim, 1994). Estimation of the doubled bounded WTP data with the interval data econometric model improves the statistical efficiency of WTP estimates relative to single bounded models (Hanemann et al., 1991).

Haab and McConnell (2002) found that doubled bounded format has three advantages, namely the number of responses is increased so that a given function is fitted with more data points. The sequential bid offers for yes-no and no-yes responses yield clear bounds on WTP and finally, for the no-no and yes-yes combinations, efficiency gain comes from the fact that they truncate the distributions where the respondent’s WTP are likely to reside. In the same way the triple bounded or multiple formats have an addition follow-up question.

In this study the contingent valuation approach was chosen because the organic pork in Thailand is a non-market commodity, which is not available within the real market. In addition we selected the doubled bounded approach. In this format, the respondents are presented with two bids where the level of the second bid is contingent upon the response to the first bid. If the respondents answer “no” to the first bid, the second bid is a lower amount, when the respondents answer “yes”, it is some higher amount. Thus, there are four possible outcomes: YY, YN, NY and NN.

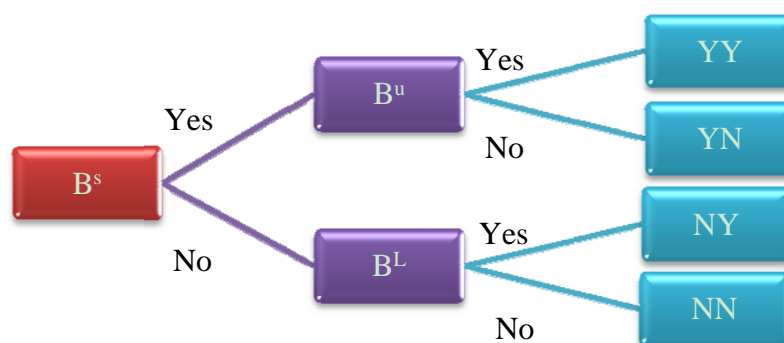


Figure 1. Doubled bounded format.

YY: both answers are “yes”; YN: “yes” followed by “no”; NY: “no” followed by “yes” and NN: both

answers are “no”. The probabilities of these outcomes are  $\pi^{YY}, \pi^{YN}, \pi^{NY}$  and  $\pi^{NN}$ . Following Hanemann et al. (1991), the probabilities of these response outcomes can be represented by:

$$\begin{aligned} Pr(YY) &\equiv \pi^{YY}(B_i^S, B_i^U) = 1 - G(B_i^U; \theta) \\ Pr(YN) &\equiv \pi^{YN}(B_i^S, B_i^U) = G(B_i^U; \theta) - G(B_i^S; \theta) \\ Pr(NY) &\equiv \pi^{NY}(B_i^S, B_i^L) = G(B_i^S; \theta) - G(B_i^L; \theta) \\ Pr(NN) &\equiv \pi^{NN}(B_i^S, B_i^L) = G(B_i^L; \theta) \end{aligned} \quad (1)$$

where  $B_i^S$  denotes the initial bid,  $B_i^L$  denotes the second lower bid and  $B_i^U$  denotes the second higher bid.  $G(B_i^S; \theta)$  represents the cumulative probability distribution of the bid with the parameter vector  $\theta$ . The corresponding log-likelihood function for the doubled bounded model is written as:

$$\begin{aligned} \ln L(\theta) &= \sum_{i=1}^n d_i^{YY} \ln\{1 - G(B_i^U; \theta)\} + d_i^{YN} \ln\{G(B_i^U; \theta) - G(B_i^S; \theta)\} \\ &\quad + d_i^{NY} \ln\{G(B_i^S; \theta) - G(B_i^L; \theta)\} + d_i^{NN} \ln\{G(B_i^L; \theta)\} \end{aligned} \quad (2)$$

where  $d_i^{YY} = 1$  if the  $i$ th respondent is YY, and = 0 otherwise,  $d_i^{YN} = 1$  if the  $i$ th respondent is YN, and = 0 otherwise,  $d_i^{NY}$  and  $d_i^{NN}$  are defined similarly. The maximum-likelihood (ML) estimator for doubled bounded model is the solution to the first-order condition:

$$\frac{\partial \ln L(\hat{\theta})}{\partial \theta} = 0$$

However, a prerequisite for using this empirical model for doubled bounded responses is also called the “interval-data model”. That is respondents’ preferences regarding the proposed good remain the same when answering to the first and the second bids. However Cameron and Quiggin (1994), Aprahamian, Chanel, and Luchini (2007), Ready, Buzby, and Hu (1996) noted that the second answer may be influenced by the answer at the first response, where this first bid serves as an anchor. Therefore, in a doubled bounded model, the bivariate probit model is the appropriate specification to estimate consistent mean values.

Green (2007) thus postulates the bivariate probit model is a natural extension of the binary choice model in which two decisions are taken jointly:

$$\begin{aligned} y_{i1}^* &= \beta_1' X_{i1} + \varepsilon_{i1} & y_{i1} &= 1 & \text{if } y_{i1}^* > 0 & \text{or} \\ & & y_{i1} &= 0 & \text{Otherwise} & \\ y_{i2}^* &= \beta_2' X_{i2} + \varepsilon_{i2} & y_{i2} &= 1 & \text{if } y_{i2}^* > 0 & \text{or} \\ & & y_{i2} &= 0 & \text{Otherwise} & \end{aligned} \quad (3)$$

$$[\varepsilon_{i1}, \varepsilon_{i2}] \sim N_2[0, 0, 1, 1, \rho], \quad -1 < \rho < 1$$

where  $y_1$  = the first vector of price offered;  $y_2$  = the second vector of price offered.

When the bivariate probit model includes other covariables in addition to price, Krinsky and Robb’s (Wilner

Jeanty, 2007) calculate the mean WTP through the following expression:

$$\text{Mean WTP} = \frac{-\bar{X}\beta'}{\beta_0}$$

where  $\bar{X}$  = the vector of the mean of the variables;  
 $\beta'$  = the vector of estimated coefficients;  
 $\beta_0$  = the coefficient of the bid.

The dependent variables  $y_1$  and  $y_2$  are decisions that correlated, the second response being considered as reliable as the first.

### Results

#### Sample Description

In this study 400 respondents were conducted with a face-to-face interview. All of the questionnaires gathered were considered valid for the data analysis procedure. Table 1 presents a summary of the main respondent’s characteristics.

Table 1  
*Descriptive and Summary Statistics of Socioeconomic Variables*

Variable definition	Code	Frequency	Mean
<b>Gender</b>			
Female = 1	SEX	223	
Male = 0		177	
Age	AGE	-	46.74
<b>Status</b>			
Single = 1	STA	111	
Otherwise = 0		289	
<b>Education</b>			
High school or less = 1; Otherwise = 0	EDU1	113	
Bachelor = 1; Otherwise = 0	EDU2	170	
<b>Household income</b>			
< 30,000 Baht = 1 ; Otherwise = 0	HH1	125	
30,001-50,000 Baht = 1 ; Otherwise = 0	HH2	96	
50,001-70,000 Baht = 1 ; Otherwise = 0	HH3	65	
Household size	MEM	-	3.60
Number of children	CHILD	-	0.48

Table 1 shows the descriptive and summary statistics of socioeconomic variables, the results show that the 223 of respondents (55.75%) were female. The average ages of respondents were 46.74 years old. The number of respondents with a bachelor degree was about half of the sample (42.50%). We chose the monthly household income as the indicator of family welfare status. In our sample, monthly household income less than 30,000 Baht account for 31.25% and 28.50% of respondents had a household income of more than 70,000 Baht. In case of the household size, the average family members were 3.60. In the survey, the average number of children under 15

years old was 0.48.

Table 2 shows the descriptive and summary statistics of knowledge, perception and behavior variables. The results show that 215 of respondents or 53.75% had confidence in quality and certificate standard controlled of organic products. In the view of consumption behavior, we found that only 183 of respondents or 45.74% sometimes buy organic product. About 372 of respondents (or 93.00%) would be willing to buy organic pork if they were more available and 300 respondents (or 75.00%) mentioned that information of organic products that they received was sufficient.

Table 2

*Descriptive and Summary Statistics of Knowledge, Perception and Behavior Variables*

Variable definition	Code	Frequency
Confident		
The confidential in organic products	CONFI	
Not at all = 0;		34
A few = 1;		215
High = 2		151
Behavior		
Regularly to buying organic products	BEHAVE	
Not at all = 0;		14
Sometime = 1;		183
Almost = 2;		90
Often = 3		113
Available		
The respondent would be willing to buy organic pork if they were more available	AVI	
Yes = 1;		372
No = 0		28
Information		
The sufficiency of information about organic products that the consumer received.	INFO	
Sufficient = 1;		300
Insufficient = 0		100
The score of 10 questions for testing about understanding of organic products	SCORE	-
Know		
The self-report in level of knowledge about organic products	KNOW	
Not at all = 0		47
A few = 1;		250
High = 2		103

### Willingness to Pay for Organic Pork

In the WTP elicitation questions, the initial bids are 8 Baht, 15 Baht, 20 Baht and 25 Baht; they were randomly assigned to all respondents. As mentioned above, in the follow-up question, if the respondent said “yes” to an initial bid the follow-up bid was doubled. On the other hand if the respondents said “no” the bid in the follow-up question was halved. As it can be seen, there is a clear tendency for affirmative responses to decrease as the bid increase. Table 3 summarizes the bids and responses to the doubled bounded questions.

From there, we examined the impact of various dependent variables on the willingness to pay using the doubled bounded technique. Many bivariate probit models were estimated and compared in order to choose the best fit using log-likelihood test. Table 4 shows the estimation results of the selected model. Some variables were



dropped in the model in order to avoid multicollinearity problem.

Table 3

*Detailed Discrete Responses to the Doubled Bounded Question*

Initial bid	YY	YN	NY	NN	Total
8	72	13	7	7	99
15	43	30	25	13	111
20	21	38	21	7	87
25	31	25	22	25	103

Table 4

*WTP for Organic Pork: Results for Bivariate Probit Model*

Variables	WTP the 1st bid		WTP the 2nd bid	
	Coefficient	S.E.	Coefficient	S.E.
Constant	-2.010**	0.812	-0.672*	0.506
First bid	-0.040**	0.016	-	-
Second bid	-	-	-0.037***	0.007
SEX	0.131	0.164	0.017	0.147
AGE	-0.008	0.008	0.006	0.006
ED1	-0.383	0.280	0.199	0.226
ED2	0.059	0.210	-0.036	0.190
HH1	0.413*	0.224	0.067	0.219
HH2	-0.002	0.150	0.004	0.215
HH3	-0.465*	0.241	0.173	0.239
KNOW	-0.344**	0.140	-0.080	0.126
INFO	0.500**	0.255	0.392*	0.218
CONFI	0.247*	0.134	0.370***	0.119
BEHAVE	0.334***	0.107	0.363***	0.091
SCORE	0.397***	0.068	0.254***	0.052
AVI	2.753***	0.484	0.120	0.373
$\rho$	0.455***	0.171	-	-
Log-likelihood	-404.331	-	-	-
Wald statistic	217.15	-	-	-

Notes. \* Significant at 10%; \*\* Significant at 5%; \*\*\* Significant at 1%.

In this study, we examined the impact of various factors that influence consumers' willingness to pay for organic pork. The dependent variables compose of a price (bid), socioeconomic variables, habit, as well as knowledge of respondents. Before interpreting the results, we re-examined the appropriateness of our specification. The value of  $\rho$  is large and statistically significant. This supports our bivariate probit specification. The Wald statistics also reveal that the variables included in the model are jointly statistically significant in explaining the WTP decision of respondents.

As expected from Table 4, we found that the coefficients of the bid values were negative and significant. It indicated that the probability of say "yes" to bid decreases as the value of bid increases, which is consistent with the demand theory. In both the first and the second bids the results show that the socioeconomic variables such as gender, age and education level were statistically insignificant. For income variables, only HH1 and HH3 are

significant in the first bid and surprisingly there is a positive sign in HH1 that contrasts with the results of many previous studies. These studies confirmed the positive and significant relationship between income or wealth and WTP (Boccaletti & Nardella, 2000; Akgungor, Miran, & Abay, 2007; Budak, Budak, Kacira, & Yavuz, 2006; Senturk, 2009).

Results of the research also shown that there was a positive relationship between the WTP for organic pork and the frequency for buying organic foods consumption (BEHAVE). Higher frequency organic foods that are consumed by the respondents seem to be more WTP. This finding is consistent with the results of Budak et al. (2006) and Gunduz and Bayramoglu (2011).

The confidential in organic products (CONFI), the score of 10 questions for testing about understanding of organic products (SCORE) and the sufficiency of information about organic products that the consumer received (INFO) were important variables influencing WTP. We found these variables to be significant and having a positive impact on WTP decision. Respondents, with high confident in organic products, received sufficient information about organic products. They also received a high score in the questionnaire based on testing about the organic product. Their knowledge also increased the probability of WTP for organic pork. Regarding to the AVI variable, we found it to be significant in the first bid equation. The respondents would be willing to buy organic pork if they were more available.

Studies have been previously compared using socioeconomic variables as WTP predictors for organic food products. However, the results of this study that is related to a study done by Gil et al. (2000) asserted that the variable that better approximates WTP is lifestyle and knowledge rather than the usual socioeconomic factors. One of the objectives of this study is to provide a measure of the WTP of respondents. As we have seen above, in the discrete choice models, this task may not be straightforward since the amount respondents were willing to pay was not directly observed. We estimated the mean WTP of respondents using the method suggested by Krinsky and Robb's (Wilner Jeanty, 2007). Our results indicated that on average the consumers were willing to pay 34.30 Baht premium price for organic pork.

### **Marketing Mix**

To access the marketing potential this study examined product attributes that are consistent with consumer preference by using the marketing mix (4P's)—product, price, place, and promotion. The results are shown in Table 5.

Table 5 shows the results of marketing mix of organic product. Fifty one point two five percent of respondents agreed that branding should be accepted by the customers. Sixty one point seven five percent of respondents agreed in terms of label which has to show a special product in details. For example, sources of pig farm, organic brand and quality product certification.

In case of packaging, almost 45.25% of respondents reviewed that organic pork should be modernly packaged and 60.25% of respondents recommended that the packaging should be related to environmental concern. Half of them point that the package should show the standard quality of organic products.

About 66.25% of respondent agreed that the price should be related with the quality of products. In terms of reasonable price, 90.25% of respondents tended to be strongly aware. In the area of distribution, organic pork should be available to buy at any place. Also, more than half of the respondents were concerned about the method

of transportation and storage of organic pork.

In the view of promotion 75.25% of respondents suggested that marketers have to promote organic pork via any media to stimulate consumer buying and for customers to respond to the sales promotion. Sixty eight point seven five percent of respondents showed that organic pork should have public relations on a regularly basis for the purpose of building the product's image. Furthermore, sellers should provide feedback from their customers if they want to improve product quality.

Table 5

*Marketing Mix of Organic Products*

	Strongly agree	Agree	Average	Disagree	Strongly disagree
Brand accept	178 (44.50%)	205 (51.25%)	10 (2.50%)	7 (1.75%)	-
Label has more details.	143 (35.75%)	247 (61.75%)	7 (1.75%)	3 (0.75%)	-
Modern package	25 (6.25%)	156 (39.00%)	136 (34.00%)	75 (18.75%)	8 (2.00%)
Environmental package	121 (30.25%)	241 (60.25%)	33 (8.25%)	5 (1.25%)	-
Packaging shows the organic standard quality	196 (49.00%)	161 (40.25%)	41 (10.25%)	2 (0.50%)	-
Price with quality	110 (27.50%)	265 (66.25%)	25 (6.25%)	-	-
Reasonable price	107 (26.75%)	254 (63.50%)	37 (9.25%)	2 (0.50%)	-
Convenient to buy	40 (10.00%)	260 (65.00%)	86 (21.50%)	13 (3.25%)	1 (0.25%)
Quality of storage	117 (29.25%)	225 (56.25%)	57 (14.25%)	1 (0.25%)	-
Media and information	66 (16.50%)	235 (58.75%)	88 (22.00%)	11 (2.75%)	-
Sale promotion	58 (14.50%)	220 (55.00%)	111 (27.75%)	11 (2.75%)	-
Public relation for good image	64 (16.00%)	211 (52.75%)	116 (29.00%)	9 (2.25%)	-
Customer feedback	133 (33.25%)	199 (49.75%)	59 (14.75%)	9 (2.25%)	-

## Conclusion

In Thailand, with the concern for environmental quality and food safety, the demand for safety and organic foods is increasing. The major consumers have not regularly purchased organic food. Even though they have some serious concern about health hazard. The market of organic food in Thailand is a niche market which is sold primarily in specialty stores. The market and demand for livestock products are growing especially for pork product. This provides opportunities for the organic pork due to the popular increase of organic pig farming on the part of small-scale farms in many Thai provinces. Therefore, the purposes of this study is to estimate consumer willingness to pay (WTP) for organic pork, to explore factors influencing consumer WTP as well as to identify the product attributes that are consistent with consumer preferences

In this study a doubled bounded dichotomous format was used to examine the WTP a premium price for organic pork. The technique gives the results which are consistent with economic theory. It shows that organic pork is a normal goods and the price (bid) is a key variable in affecting demand. We examined factors that affect WTP for organic pork by using a bivariate probit model. The result indicated that education, gender and age do not affect the WTP decisions. Most of the organic purchase behavior, perception, and knowledge about organic products variables strongly affect the decision of respondents to pay both the first and second bids; despite the fact that income does not have a significant impact on the WTP decision of the respondents. We computed the mean WTP or a price premium for organic pork. On the average respondents are willing to pay 34.30 Bath per kg. That means the Thai government should give special support to organic pork farmers and distributors to reduce

the production cost and improve product efficiency in order to remain in this premium price. From this study, the potential customers who are willing to pay a premium price are the customers that purchase for safety reason or buy organic products on a regularly basis, and possess a high knowledge about organic products.

The organic product branding should be accepted by the customers and the label has to show special product details, such as sources of pig farm, organic brand and quality product certification. In packaging, organic pork should be packaged in a modernized form and be processed with an environmental conscience. In addition, the standard quality of organic products should be displayed to the purchasing customers. The price should be related with quality of products and at a reasonable price. In the area of distribution, organic pork should be available to buy at any place, transported in a sound manner, and stored to preserve the freshness of organic pork.

As for promotion, marketers have to promote organic pork through any media that is available in order to stimulate consumers' buying as well as doing public relation on a regularly basis for the purpose of building the image of the product. Also, sellers should obtain feedback from their customers so that they can use the information to improve the quality of the product.

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