

CONSUMER PURCHASE BEHAVIOR TOWARDS ORGANIC POTATOES IN VIENTIANE CAPITAL, LAO PDR

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Abstract – *The study aims to estimate the consumer's valuation of organic potatoes related to conventional potatoes and determine the information effect on organic potatoes. This study used a questionnaire to conduct face-to-face interviews in four organic markets in Vientiane Capital, which was distributed to 300 samples. The experiment was divided into three treatments: (1) no information (did not provide any information), (2) positive information (the positive impacts of conducting organic agriculture), and (3) negative information (the negative impacts of not conducting organic agriculture). The study findings indicate that shoppers are interested in purchasing a total average price of 32 percent organic potatoes over conventional potatoes. The mean willingness to pay for organic potatoes through the information treatments shows that the no information treatment is the highest, followed by positive and negative information with the lowest willingness to pay. The findings also reveal that the insignificant effect of positive and negative information on purchasing organic vegetables significantly reduces willingness to pay. It also shows that age, gender, education, income, and household size insignificantly influence willingness to pay. However, consumers' preferences for organic are relative to conventional potatoes, but their preferences did not change their value for organic potatoes, despite better positive information provided. Consumers already know that the premium price for potatoes is high, so*

they do not want to increase the value of the potato. Moreover, policymakers have to recheck the organic price, and future researchers should examine other essential factors that may affect consumers' purchase behavior towards organic products in Laos.

Keywords: *consumer purchase behavior, information effect, organic potato, Tobit model, willingness to pay.*

I. INTRODUCTION

In Laos, subsistence agriculture has always been a massive factor in rural life, and a lot of the rural regions are still measured organic by default since farmers cannot afford to buy chemical inputs. However, due to increased government funding for more intensive forms of agriculture and increased demand from commodity-scarce surrounding markets, the country is fast changing. As a result, rural households are increasingly pursuing a variety of subsistence and earning activities as part of their livelihood plans (e.g. off-farm and non-farm activities, commercial agriculture). Farmers obtain and increasingly use agricultural inputs (e.g. enhanced variety, fertilizers, insecticides, etc.) that were previously not used without their understanding and that they do not precisely know how to use as small-holder farmers move to commercial agriculture. As a result of this more intense (and not always suitable) application of chemicals such as fertilizers and pesticides, which will in return result in (a) farmers having a higher risk of environmental degradation (e.g., water and soil contamination) as well as health concerns; and (b) more significant risk of unsafe products for consumers (e.g., pesticide residues in food). Environmental issues are a significant concern for many consumers worldwide [1]. Natural products and

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social responsibility have also been increasingly crucial in discussing alternative food systems [2]. This is because today's harsh environmental factors are destroying consumers' health and well-being [3]. As a result, the increased inflow of chemical fertilizers presents a concern, and pesticides in Laos will quickly harm the country's comparative advantage in organic agriculture [4]. Since the early 2000s, Laos Organic Agriculture has developed an organic agriculture system through international development programs. The Lao PDR's agricultural development strategy also prioritizes organic agriculture. The Ministry of Agriculture and Forestry and several NGO projects established and adopted the organic standard (No.1666/MAF) in 2005. According to the agricultural development strategy, the MAF aims to have 70,000 organic producers certified by 2020-2030. The Lao PDR currently has three organic standards: one for rice, one for coffee, and one for crops [5].

The Lao certification body (LCB) was launched in 2008, and the MAF certified the Clean Agriculture Development Centre (CADC) as a project. The ministry has adopted three independent eco-friendly, healthy, or clean labels under the support of the CADC: The organic, clean farming, and good agricultural practices (GAP) labels are all available. Organic farming was presented as part of new agriculture in the Ministry of Agriculture's new National Agricultural Development Strategy in 2011. It intended to bring farmers and consumers together through high-value products. Organic farming has been identified as improving agriculture's social and environmental performance while also allowing poor farmers to participate in value-added companies [6].

Organic food is said to be more beneficial for the planet than regular food. Organic agriculture contains a diverse set of techniques to be socially, environmentally, and economically sustainable [7]. Organic farming provides a high vitamin content and other health benefits [8]. In the last six years, organic food consumption has grown fivefold. Thus, the increase in organic products

is considered part of growing marketing trends [9]. Shoppers need to understand what an organic item can offer before making a buying decision. To acknowledge why consumers are willing to consume a product, you must first study the characteristics of the final purchasing decisional process and, as a result, what the customer needs or wishes to attain with the purchase [10]. Consumer behavior is defined from a cognitive viewpoint as 'the activities that people participate in while selecting, purchasing, and using goods and services to achieve their needs and preferences' [11, p.644]. As a result, examining the factors that influence organic item consumption has become a popular topic in marketing research in recent years [12].

The study aims to analyse consumer purchase behavior towards the organic potato. The primary objectives are better to understand the marketing output of significant organic vegetables. This information will be used as a guideline for improving output. This paper is part of a scientific study on consumption in Laos concerning organic vegetables. Policymakers need to understand consumers' opinions and respond to various sources of information to efficiently establish successful marketing strategies and a new food policy in the future. These will be crucial challenges as long as organic vegetables are one of Laos' most important commercial crops.

II. LITERATURE REVIEW

This empirical model review consists of reviewing relevant literature related to and consistent with the paper's purpose to acknowledge better the whole concept and methodology used in the previous study. So, it can be used as a guideline for this research to examine the potential for future and current research efforts on the topic. Several recent studies have examined the consumer's valuation of organic products worldwide; the details are shown below. Boccaletti et al. [13] analysed the results of a study of Italian customers' willingness to pay (WTP) for organic fresh vegetables and fruit. A shopper study on WTP for organic food was launched in

Northern Italy, and three significant grocers were found. The data was collected, and ordered logit analysis was undertaken to investigate the impact of primary independent factors on the frequency of customers' WTP for various product pricing premiums. According to the findings, WTP is linked to income and risk factors significantly and positively, although education is negatively related.

Mixed probit model was used to evaluate customers' willingness to buy apples [14]. The sooty blotch and flyspeck (SBFS) virus complex negatively impacts apples' appearance but does not affect their safety or taste. While selecting production practices, disease treatment is more complex and expensive for organic producers, and growers must consider whether shoppers are happy to pay more for organic apples. They also discovered that apples with low levels of SBFS damage are more expensive for consumers.

In the domestic market of Argentina, the preparedness of buyers to pay for organic produce was estimated [15]. A food consumption survey was used to estimate a binomial multiple logistic regression model in Buenos Aires, Argentina. Their WTP for five organic items was calculated using the contingent valuation method: fresh chicken, regular milk, complete wheat flour, aromatic herbs, and green vegetables. Empirical findings show that shoppers are intended to pay a high price for these items. Even though the price is a factor, organic product use in the country is limited due to a lack of retail access and a realistic regulatory structure to handle quality issues.

Consumers' perceptions of food security and safety were examined in the big city of Vietnam [16]. Customers' WTP for organic pre-cut potatoes and Chinese mustard was estimated using a contingent valuation technique in a mediation framework. They discovered that Vietnamese customers are happy to pay a 60% high price for organic Chinese mustard and a 19% premium for various potato convenience features. Income and the media impact willingness to pay, which is partially mediated through consumer attitudes.

The decision was made to use a variety of multivariate approaches, such as demographic variables using regression analysis, confirmatory factor, and cluster analysis such as health, availability, and education influencing organic food purchases. Organic food has a higher consumer satisfaction rating than regular organic food [17]. However, levels of satisfaction vary based on several factors.

Regarding the evaluation of the current state of consumption of organic production and the willingness of buyers to purchase a higher price for organic vegetables in Hanoi, Vietnam, Hai et al. [18] utilized descriptive statistics and the contingent valuation method (CVM) for the double-bound dichotomous choice analysis. As a result, 15% of consumers had prior experience with organic vegetables, and 88% planned to purchase organic items if they were available. The main reasons for limited organic food consumption were a lack of skill in the organic market and the inconvenience of purchasing organic foods. The average cost of organic vegetables was almost 70% more than that of conventional vegetables. Furthermore, customers with higher incomes, more significant concerns about vegetable safety, and previous organic-consumption experience were more likely to spend more on organic vegetables.

Owusu [19] analysed consumer WTP and found a higher price for organic lettuce and watermelon than regular lettuce and watermelon, using contingent valuation data in the Kumasi Metropolis of Ghana. The impacts of customer willingness to pay a higher price were studied using a bivariate Tobit model. They discovered that consumers WTP a high price for organic watermelon over regular watermelon is significantly influenced by product freshness, cleanliness, and socioeconomic variables. While the size of the product prevents consumers from paying a higher price for organic lettuce, minor insect damage to crops has a positive influence. For 1 kilogram of organic watermelon, the average customer willingness to pay a premium is estimated to be GH0.55 (US\$ 0.45), and for 1 kilogram of

organic lettuce, it is GH1.25 (US\$1.03).

Consumers who believe organic food has a positive value are more inclined to buy it, with health being the most essential perceived benefit [20]. Consumers who believe organic food has a negative value are less likely to purchase it. Many people have difficulty distinguishing between non-organic and organic foods. Instead, they saw organic food as too expensive and claimed they needed more effort to find organic food.

Trinidadian customers show their willingness to buy organic tomatoes, and the product is being marketed as a unique product with commercial potential [21]. The parameters that affect WTP for organic tomatoes were determined using the logit model. An ANOVA method was used to calculate the mean and highest WTP for organic tomatoes on the basis of the stated variables. The findings revealed that most shoppers preferred organic tomatoes who were intended to pay a high price. Consumers' WTP was strongly affected by their area, education level, and income range, and organic tomatoes are perceived to have health benefits.

The theory of planned behavior (TPB) and its enhanced form (positive influence of TPB variables), including the theory of reasoned action (TRA), may predict the intentions of Indian shoppers to buy green items [22]. According to structural equation modelling (SEM), the findings suggest that extended TPB has more predictability in green marketing situations than TPB and TRA, according to structural equation modelling (SEM). Buying intention is significantly predicted by both consumer attitude and perceived behavioral control but not by subjective norms.

Pesticide users are aware of the dangers they pose to their health, but they cannot distinguish between cabbage grown under nets and cabbage grown with pesticides in terms of quality [23]. Buyers were more willing to purchase a more significant cabbage for premium with fewer pesticide residues than regular-produced cabbage, with an average price increase of 38%. Shoppers who were prepared to pay the most were women,

older and more educated people, and those who could tell the difference between different types of cabbage.

Customers' intention to purchase organic vegetables cultivated in the Vietnamese Mekong Delta was estimated using a dichotomous choice contingent valuation (CVM) method [24]. According to the study, most consumers were interested in certified organic items and were happy to pay a 59% higher price. Organic vegetables were more likely to be purchased by buyers who are aware of their health and the safety of their food, and those with a high family income and education were also ready to spend a higher price on organic vegetables than conventional vegetables.

Investigation of customers' readiness to pay for the quality of organic and integrated pest management (IPM) rice in Vietnam's southern cities [25]. Including suggestions regarding the advantages of reasonable producer prices and clean production processes. An option test (n = 500) was used to estimate a survey using basic mixed logit methods. According to the findings, when compared to conventional rice, Vietnamese customers are ready to pay 82% more for organic rice and 45% higher than IPM-grown rice. Consumers are also prepared to pay a 95% extra for rice that claims to be high in vital nutrients and a 50% premium for rice that rice planters are promised a reasonable price.

These factors influence young customers' intentions to buy a specific type of organic item in an emerging market in Vietnam [26]. According to structural equation modelling, multivariate data analysis, health consciousness, food safety concerns, and media exposure to food messages all played a part in establishing attitudes toward organic food. They also demonstrated that environmental concerns and food choices did not influence customers' perceptions. Perceived barriers hampered both perceptions and buying intentions toward organic food (e.g., high cost, limited availability, sloppy labelling, and extra effort required).

Bhattarai [27] analysed consumers' WTP for

organic vegetables in the Kathmandu valley, Nepal. They are utilizing a bounded dichotomous choice contingent valuation technique with only one option. According to the study, bid premium, family size, education, consumer perceptions of chemical contamination in regular vegetables, and personal knowledge of vegetable-borne infections influence consumer WTP at a high price for organic vegetables. On average, 25% of those surveyed were prepared to purchase a premium price for organic items. There is a demand for a suitable supply of organic products in the Kathmandu valley because there is a product-market. Customers may be more confident in organic vegetables if the government certifies them as organic or other institutions.

In Hanoi, Vietnam, researchers identified the factors that affect people's willingness to spend on organic vegetables, specifically local variances and the impact of risk attitude [28]. The analysis was performed using the contingent valuation method. WTP of organic vegetables grew in city and country locations as satisfaction with organic vegetables, trust in organic labelling, and expendable household income increased. While regular vegetables had a high-risk perception in both areas, high prices in the city prevented consumers from acting on their organic vegetables. Furthermore, the average share of home-grown vegetables in a family's overall vegetable consumption is significant in the WTP, mainly rural. Furthermore, being an organic shopper in the urban region was significantly connected to the WTP, but not in the rural region. Poyearleng et al [29] investigate the factors that affect consumers' purchase decisions while buying organic products in Laos. The consistency analysis was carried out using Cornbrash's alpha technique. Several statistical processes such as data analysis and multiple linear regression analyses were applied to the data collected through a questionnaire survey. According to the study, customers' opinions about organic vegetables are influenced by their attitudes toward goods, health awareness, price satisfaction, and understanding of organic products. In the study conducted by Suanmali

[30], the researcher discovered the issues that affect people's ability to purchase organic vegetables and fruits in Bangkok, Thailand by using the contingent valuation method (VCM). Binary logistic regression and regression analysis are used to determine the descriptive findings of the significant factors. A willingness to pay the high price group's average amount (median value) is up to 60% more than the non-organic pricing.

Polish consumers' behavior in the organic product market attempted to link their environmental concerns and motivation to purchase organic items [31]. They found that a critical factor in a consumer's purchase decision is organic items. These include, among other things, beneficial health impacts, nutrient content, no added ingredients used in food production, and flavour. Environmental protection and the intent to purchase organic products have been statistically connected.

III. RESEARCH METHODS

A. Data source

The study utilized primary data through interviews employing face-to-face questionnaires for approaching the four organic markets, including Lao-ITECC, Vientiane Centre, Luk ha (Km5), and Xangkhu market in Vientiane Capital. These markets, being prominent fresh markets in the area, house a variety of organic vegetable vendors, ensuring a sufficient respondents for the study. The convenience sampling method was utilized by approaching customers leaving the organic market who were willing to answer questions. The survey was conducted from the middle of July to the middle of August 2021. The questionnaire was divided into three groups based on three treatments: (1) no information (did not provide any information), (2) positive information only, and (3) negative information only in the questionnaire. Positive information provision group was provided the following statement: 'Organic farming can reduce emissions as it builds on reduced inputs, closed nutrient cycles, and fertile soils. It provides many animal welfare and environmental benefits for soils, water, and

biodiversity. Feeding animals on well-managed grasslands also contributes to putting carbon back in the soils' [32]. If organic farming is conducted to produce agricultural products, there is a high possibility of getting the above benefits. Negative information provision group was provided the following statement: 'Organic farming can reduce emissions as it builds on reduced inputs, closed nutrient cycles and fertile soils. It provides many animal welfare and environmental benefits for soils, water, and biodiversity. Feeding animals on well-managed grasslands also contributes to putting carbon back in the soils' [32]. If organic farming is not conducted (i.e., keeping conventional farming practices), there is less possibility of getting the above benefits. Three group respondents are available, and an interviewer responds to 100 respondents, a total of 300 respondents.

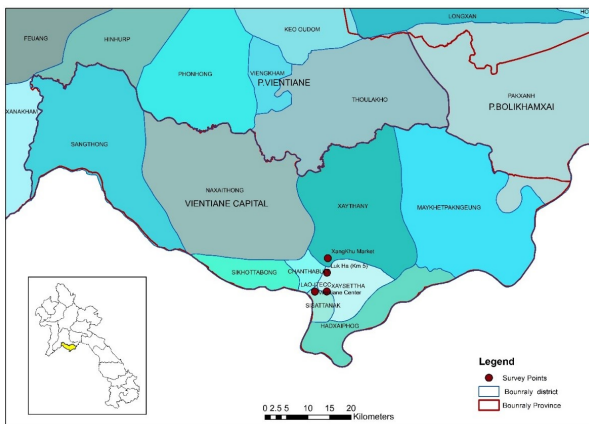


Fig. 1: Map of Vientiane Capital with the survey markets

The survey questionnaire includes four sections with 21 main questions as follows: Section A: Socio characteristics of respondents. Section B: Factors influencing consumer purchase behavior of organic vegetables. Section C: Consumer's knowledge, consumption and purchasing behavior of organic vegetables. Section D: Valuation for organic potatoes, and Table 1 presented those variables.

B. Empirical approach

Unconditional analysis

The t-test was used in this research to see whether there were various influences between the two groups' means. The research used a t-test to test the information effects of the treatments, comparing no information with positive information and negative information, to compare the mean of the two groups' WTP differences. Additionally, the study employed the t-test to compare regular potatoes with organic potatoes, examining the mean WTP differences across various conditions (no information, positive information, and negative information). The details of the t-test formula used in the analysis are provided below.

A paired t-test is used when the samples are frequently made up of matched pairs of similar units or repeated measures [33]. It is possible, for example, that the same patients are examined multiple times before and after getting treatment. In such cases, each client is used as a sample population versus themselves. This method can be used when the samples are related or have similar characteristics, such as when comparing kids, father and mother, or relatives. Because they include two pairs of samples that are linked, paired t-tests are dependent testing. The equation is shown below:

$$T = \frac{\text{mean1} - \text{mean2}}{\frac{s(\text{diff})}{\sqrt{n}}}$$

Where: mean 1 and mean 2 = the averages of the values in each sample set; s(diff) = the difference between the paired data values' standard deviation; n = the number of paired differences; n-1 = the degrees of freedom.

Conditional analysis

The ordinary least squares method is attributed to Carl Friedrich Gauss, a German mathematician credited with inventing the ordinary least squares method. The least-squares method has some appealing statistical qualities under specific assumptions, making it one of the most potent and famous regression analysis approaches [34]. The equation of the two-variable is shown in (1).

Table 1: Description of variables

Variables	Abbreviation	Variable description and unit
Dependent Variable		
WTP of organic potato	WTP	Amount of money per kilogram
Independent variables		
No information	NOINFO	Dummy variable (No information = 1, Otherwise = 0)
Positive information	POINFO	Dummy variable (Positive information = 1, Otherwise = 0)
Negative information	NEINFO	Dummy variable (Negative information = 1, Otherwise = 0)
Gender	GENDER	Dummy variable (Male = 1, Female = 0)
Age	AGE	Year
Awareness	AWARE	Dummy variable (Yes = 1, No = 0)
Purchasing Plan	PPLAN	Dummy variable (Yes = 1, No = 0)
Household size	HHSIZE	Categories variable (Age 5 and younger = 1, Age 6-17 = 2, Age 18-39 = 3, Age 40-54 = 4, Age 55 and more = 5)
Buying frequency	BUYFRE	Categories variable (Daily = 1, Once per week = 2, 2 to 3 times per week = 3, Once a 2 week = 4, Once a month = 5, Once a 2 month = 6, Once a year = 7, Other = 8)
Education level	EDU	Categories variables (No study = 1, Primary school = 2, Secondary school = 3, High school = 4, Bachelor = 5, Master = 6, PhD = 7)
Income	INCOME	Categories variables (Less than \$300 per month = 1, \$301-\$600 per month = 2, \$601-\$900 per month = 3, \$901-\$1,100 per month = 4, \$1,101-\$1,500 per month = 5, more than \$1,500 per month = 6)
Duration	DURAT	Categories variables (Less than 1 year = 1, 1 to 2 years = 2, 3 to 4 years = 3, more than 5 years = 4)

$$Y_i = \beta_1 + \beta_2 X_i + \varepsilon_i \quad (1)$$

The Ordinary Least Squares (OLS) estimation method was used to characterize and value the marginal impacts of the consumers’ WTP for organic potatoes. The dependent variable was stated as consumers’ WTP of organic potatoes relative to conventional potatoes. The model was adopted as the Equations (2) and (3).

$$Y_i = \beta_0 + \beta_1(X_1) + \beta_2(X_2) + \beta_3(X_3) + \dots + \beta_i(X_i) + \varepsilon_i \quad (2)$$

$$\text{Thus, } WTP_i = \beta_0 + \beta_1(NOINFO) + \beta_2(POINFO) + \beta_3(NEINFO) + \beta_4(GENDER) + \beta_5(AGE) + \beta_6(AWARE) + \beta_7(PPLAN) + \beta_8(HHSIZE) + \beta_9(BUYFRE) + \beta_{10}(EDU) + \beta_{11}(INCOME) + \beta_{12}(DURAT) + \beta_{13}\beta_{14} + \varepsilon_i \quad (3)$$

Where, WTP_i = Willingness to pay of organic Potato; NOINFO = No information; POINFO = Positive information; NEINFO = Negative information; GENDER = Gender; AGE = Age; AWARE = Awareness; PPLAN = Purchasing Plan; HHSIZE = Household size; BUYFRE =

Buying frequency; EDU = Education Level; INCOME = Income; DURAT = Duration; ε_i = Error terms.

Table 1 provides the explanatory variables. Information effect, demographic, and socioeconomic characteristics were included to evaluate consumers’ WTP with the OLS regression method. Information effects of independent variables, including no information, positive information, and negative information. It was included in the method because the information is needed to evaluate the goods and purchase. Consumers perform an information search and evaluation before a decision to buy. Consumers will try to study and gather information about the items they intend to purchase. Information on the safety, health, and guaranteed quality of organic products are essential variables influencing consumer purchasing preferences and interests [35].

Demographic characteristics, considering the age, gender, and education of the respondents, were included in the method because those independent variables are important in purchasing decisions [36, 37]. The household’s total monthly

income was also included because it has a significant impact on changes in consumer behavior due to their expectations and other household members' decisions [38]. On the other hand, household size is a factor that influences the decision-making process for purchasing products and services [39] and consumer awareness of the product is a determining factor in purchase decisions. Health and the advantages of the products being purchased, consumer awareness includes knowing how significant a product is to oneself [40].

Buying frequency in the regression analysis [41] was one of the independent variables. It is expected to impact the WTP with the rise in food accidents involving organic vegetables in Laos in recent years. Due to a large price premium, organic products may or may not provide an incentive for Lao customers to purchase goods. Duration and purchasing plan were the independent variables in the model because the duration shows the period consumers have been consuming the organic product, and the purchasing plan exhibition whether consumers have a plan to purchase it in the future. It is also crucial for policymakers to implement the policy in the future [42].

IV. RESULTS AND DISCUSSION

A. Consumer's valuation of organic potato

The mean WTP for organic potatoes across the information treatments is shown in Table 2. The result shows that customers are happy to purchase a 37% high price for potatoes when no information is provided. The respondents who were given only positive information said the value of WTP reflected a 36% higher price for potatoes, and the participants who provided negative information said they would only pay a 24% higher price for potatoes. According to the findings, the type of information provided to the treatment significantly affects WTP for the organic potato. No information treatments found the values in higher WTP.

On the other hand, the WTP difference between no information and positive information

treatments is not statistically significant. However, the treatments of no information and negative information are statistically significant. In particular, the WTPs of treatments provided with positive information have an average price mean value of only \$0.01 lower than the WTPs of treatments with no information. In contrast, the values of WTP in the treatments given with negative information are on average \$0.14 lower than those given with no information. Based on the average price of three treatments: no information, positive information, and negative information, the findings show that buyers would like to buy a 32% high price for potatoes. The total average price means a value of \$1.40 for premium potato compared with regular potato is higher than \$0.34.

Table 2: Mean WTP for organic potatoes across the information treatments

	Information (Unit: USD currency)			
	Not provided	Provided Positive	Provided Negative	Overall
Mean	1.45	1.44	1.31	1.40
Median	1.49	1.38	1.28	1.38
SD	0.26	0.39	0.24	0.31

The study used a basic mean equality t-test on the WTPs from the various treatments. The t-test findings are shown in Table 3. The mean equality t-test on WTPs estimates that the mean WTPs of the no information and negative information treatments are statistically different and significant. Moreover, the differences between no information and positive information treatments are not significant in WTPs. According to previous information effects studies, the findings show that consumers are more sensitive to negative information than positive information. The results show that policymakers have to increase knowledge about organic vegetables among consumers to improve the negative information effect.

Table 4 shows the t-test results of the comparison between regular potatoes and organic potatoes across information effects. The mean equality t-test on WTPs estimates that the mean WTPs of the regular potatoes and organic potatoes

Table 3: T-test for equality of WTP means for organic potatoes across the information treatments

	Mean WTP differences	t-value	p-value
No information and positive information	0.01	0.26	0.79
No information and negative information	0.13***	3.68	0.00

(No information, Positive information, Negative information) treatments are statistically different and significant in WTPs. Furthermore, relative to the baseline of regular potatoes of \$1.06, the mean WTP differences of organic potatoes (No information, Positive information, Negative information) treatments are willing to pay \$0.39, \$0.38, and \$0.25 more, which is significant.

Table 4: Comparison between regular potato and organic potatoes across information effects

	Mean WTP differences	t-value	p-value
Regular potatoes and organic potatoes (No information)	-0.39***	-15.03	0.00
Regular potatoes and organic potatoes (Positive information)	-0.38***	-9.69	0.00
Regular potatoes and organic potatoes (Negative information)	-0.25***	-10.27	0.00

B. Tobit regression result

The parameter evaluations of the WTP model are shown in Table 5. The results show that the negative sign for the frequency of buying organic potatoes means that consumers who purchase more organic potatoes need to obtain more organic potatoes. The positive sign of duration for consumers buying organic potatoes shows that buyers have been consuming organic items for a long time. It also shows that gender, age, education, household size, and income do not significantly affect WTPs. Moreover, participants are aware of the value of organic potatoes and

are planning to purchase organic products. It also shows that respondents with a high current purchase price for organic potatoes are ready to purchase a premium for them. Concerning the information effects, findings from the effect of the treatment Tobit regression model show that negative information treatment the WTP has negative influences while positive information treatment insignificantly of WTPs. In particular, related to the no information with positive information is intended to pay about \$0.01 less than the baseline, but it is not statistically significant. Treatment of the negative information would like to purchase about \$0.14 less than the baseline no information treatment, which is statistically significant.

Furthermore, the study found that consumers' preferences for organic are relative to conventional potatoes, but their preferences do not change their value for organic potatoes, even though positive information (positive framing and negative framing) was provided. They do not respond sensitively to the information; it is not a big problem for them. However, according to the survey, the government employee group is higher level of awareness than others, because they already know about organic farming and its benefits. They were also familiar with the price of organic potatoes and perceived it as high. Consequently, despite recognizing the benefits of organic produce, government employees showed a reluctance to further increase the value of potatoes. Their preference leaned towards maintaining a consistent price for organic potatoes to sustain their consumption in the future. Previous studies found that the price is one of the significant factors that reduce the consumption of organic products. So, the government should take specific steps to keep the price of organic products under control [40].

Table 6 shows the parameter estimates of the Tobit regression model. Subsample analyses were conducted for two variables, namely gender and duration. The gender analysis aimed to determine any differences between males and females in their willingness to pay a higher price for pota-

Table 5: Tobit regression valuation results of consumer purchase intention towards organic potato

Variables	Coefficient	Std. Error	t-value	p-value
Intercept	1.44***	0.33	4.31	0.00
Age	-0.00	0.00	-0.86	0.39
Gender	0.00	0.03	0.16	0.86
Education	-0.03	0.02	-1.46	0.14
Income	0.01	0.01	1.15	0.25
Awareness	-0.20	0.21	-0.98	0.32
Purchase plan	0.35	0.35	0.99	0.32
Duration	0.03**	0.01	1.98	0.04
Household size	0.01	0.01	1.10	0.27
Buying frequency	-0.03***	0.01	-3.25	0.00
Negative information	-0.11***	0.04	-2.65	0.00
Positive information	0.01	0.04	0.27	0.79
No information	0.00	(omitted)		
Log likelihood				-57.50
No. of Observation				300

toes. The duration analysis compared consumers with varying levels of experience in purchasing organic potatoes, distinguishing between those with more and less experience. The result shows that the willingness to pay for organic potatoes is not statistically significant when comparing females with males. For the duration, when comparing consumers with more experience against those with less experience, the intention to buy organic potatoes displayed a statistically significant negative sign in WTPs. Furthermore, the negative sign for the frequency of buying organic potatoes found that consumers who frequently purchase organic potatoes want to get more information on organic products. Negative information negatively influences WTPs and is significant, while positive information insignificantly influences WTPs.

V. CONCLUSION AND RECOMMENDATIONS

The study findings showed that the information effect of willingness to pay has a significantly high price for potatoes. When considering the average price of organic potatoes, participants expressed a collective willingness to pay 32% more for potatoes across the three treatments. Specifically, with no information provided, respondents were willing to pay a 37% higher price for

Table 6: Subsample of Tobit regression valuation results of consumer purchase behavior towards organic potato

Variables	Coefficient	Std. Error	t-value	p-value
Intercept	1.57***	0.33	4.73	0.00
Age	-0.00	0.00	-0.75	0.45
Gender (male)	0.00	0.03	0.21	0.83
Education	-0.03	0.02	-1.46	0.14
Income	0.01	0.01	1.31	0.19
Awareness	-0.19	0.21	-0.89	0.37
Purchase Plan	0.35	0.35	0.99	0.32
Duration				
Less than 1 year	-0.10*	0.06	-1.74	0.08
1 to 2 years	-0.09**	0.04	-2.03	0.04
3 to 4 years	-0.09**	0.04	-2.12	0.03
Household size	0.01	0.01	1.14	0.25
Buying frequency	-0.03***	0.01	-3.29	0.00
Negative information	-0.11**	0.04	-2.51	0.01
Positive information	0.01	0.04	0.31	0.75
No Information	0.00	(omitted)		
Log likelihood				-56.43
No. of Observation				300

potatoes. Interestingly, even when provided with only positive information, participants indicated a 36% higher willingness to pay for potatoes. The participants who provided negative information said they would only pay a 24% higher price for potatoes. Information effects were significant in the negative information treatment to reduce WTP, and positive information insignificantly decreased WTP compared with no information treatment. Mainly, compared to WTP of consumers in no information treatment, WTP for consumers given only positive information was only 0.95% lower, while WTP for buyers given only negative information was about 13.21% lower. The Tobit regression analysis results show that negative information negatively influences WTPs while positive information insignificantly influences WTPs. The frequency of buying organic potatoes is a negative sign that consumers who frequently purchase organic potatoes want to obtain more organic potatoes. The positive sign of duration for consumers buying organic potatoes shows that buyers have experienced purchasing organic products for a long time. It also shows that age, gender, education, income, and household size insignificantly influence WTPs.

Furthermore, the study also found that con-

sumers' preferences for organic are relative to conventional potatoes, but their preferences did not change their value for organic potatoes, even though positive information was provided (positive framing and negative framing). They do not sensitively respond to the information. Moreover, according to the analysis result, the government employee group is higher than others, so they already know about organic farming and its benefits. They already know the price of organic potatoes is high, so they do not want to increase the value of potatoes. They want to continue to consume organic potatoes in the future by giving them a constant price. Based on the results of this paper, it can be recommended that it would be an advantage to both organic farming and organic marketers. The organic industry and marketing can use the results of this paper to comprehend the behavior of consumers and create a good marketing strategy for their business. This research would help extend the framework of consumer purchase behavior towards organic products for future research. Due to limited time and budget, the researcher could not collect data by himself in this study. Therefore, this study used the questionnaire to interview participants face-to-face, so participants did not want to cooperate because of the COVID-19 pandemic. It is not easy and takes a long time for data collection. Moreover, some participants said that the questionnaire was quite hard to understand. The researcher recommends that future research should make the questionnaire sample easy to understand and conduct the survey online because it will be more convenient for participants to answer, save time collecting data, and cover all areas of the country.

The findings generally suggest that consumers give a high value to organic potatoes compared with conventional potatoes. However, their preferences did not change their value for organic potatoes, despite better positive information provided (positive and negative framing). This general finding indicates that organic products should be extended to the general market by making the zone and symbol for selling organic and easy for consumers to access organic products.

Furthermore, policymakers have to recheck the organic price because most consumers say that the organic price is very high. Future researchers should examine other essential factors that may affect consumers' purchase behavior toward organic products in Laos.

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