



## Research Article

### **OPINIONS TOWARDS MARKETING MIX FACTORS INFLUENCING THE PURCHASING DECISION OF HYDROPONIC VEGETABLES AND CONSUMER CONSUMPTION BEHAVIORS FROM HEALTH ECONOMIC PERSPECTIVE**

Somboon Boonyakiat <sup>1</sup>, Witchaya Pongkrapan <sup>2</sup>, Vijay Bhaskara Reddy M <sup>3\*</sup>, Surapan Panomrit <sup>4</sup>, Surasit Chouyboon <sup>4</sup>, Champensri Suriyavipada <sup>5</sup>

<sup>1</sup> Faculty of Nursing Science, Kasem Bundit University, Thailand

<sup>2</sup> Faculty of Management Science, Phranakhon Rajabhat University, Thailand

<sup>3</sup> Faculty of Public Health, ST Theresa International College, 1 Moo 6, Rang sit, Nakhonnayok Road, Klong 14, Bungsan, Ongkharak, Nakhonnayok- 26120, Thailand

<sup>4</sup> Faculty of Nursing, Kasembundit University, Thailand

<sup>5</sup> Independent Expert, Community Nurse Practitioner. Thailand

\*Corresponding Author Email: vijaybhaskar24@gmail.com

Article Received on: 13/02/20 Approved for publication: 27/03/20

**DOI: 10.7897/2230-8407.110440**

#### **ABSTRACT**

As consuming contaminated toxic food have adverse effects on health. Therefore, this article aims to study about consumers' opinions towards marketing mix factors influencing purchasing decision and consumption behaviors of hydroponic vegetables. A sampling group of 143 first-year students of Faculty of Business Administration at St Theresa International College is selected as a Purposive Sampling. The questionnaire is used which it consists of personal information and a survey form of Consumers' Opinions towards Marketing Mix Factors influencing purchasing Decision and Consumption Behaviors of Hydroponic Vegetables. The quality of the used tool obtains 90 in validity/reliability. Statistical analysis is calculated by the percentage and standard deviation. Opinions derived from students towards marketing mix factors are most on product and marketing promotion issues which has the highest average of 3.95 and 3.95 (SD.54). Price and Place matters are the second importance having 3.73 and 3.61 (SD .07 .68) respectively. The result of this research apparently shows the importance of opinions towards marketing mix factors used to make purchasing decision of hydroponic vegetables according to the order of priority as follows: 1) Product, 2) Promotion, 3) Price and 4) Place. According to consumers consumption behaviors of hydroponic vegetables based on Health Economic, the demand will increase when the price is low while supply should render simultaneously best benefits to consumers; for example, an offer of a wide variety of fresh, cheap or with discount of hydroponic vegetables including places where they are thoroughly accessible.

**Keywords:** Opinions towards Marketing Mix Factors, Consumption Behaviors, Economic Health and Students of Faculty of Business Administration.

#### **INTRODUCTION**

Consuming toxic food and fertilizer or chemical injection can accumulate toxin causing high possibility of cancer in all body system. Taking hydroponic vegetables is, therefore, optional for good health. As a result, having well-planned in marketing and distribution can help people access to buying sources with convenience at hands. The Marketing Mix Factor is, hence, a tool that can achieve required objectives consisting of four components; 1) Product, 2) Price, 3) Place and 4) Promotion<sup>1</sup>.

As the researcher foresees the significance of consumers' opinions towards marketing mix factors influencing purchasing decision and consumption behaviors of hydroponic vegetables, thus it is brought into use as guidance in marketing plan and distribution based on Health Economic criteria. Clients (demand) prefer cheap price which make them decide to buy more whilst service providers (supply) should focus on cheap, fresh, clean and safe hydroponic vegetables in order to achieve marketing equilibrium. However, consumption behaviors of healthy products or healthy maintenance behaviors based on economic reasons influencing the purchasing decision of products under

scarcity resources, impartiality and effectiveness are also important and should be brought into consideration.

In revision of relevant literature, the study of Rata, Yatinon, Sunee<sup>2</sup> indicate that product and price have most influence on consumers' purchasing decision of hydroponic vegetables in Bangkok. Though, channel of distribution and marketing promotion are highly considered essential, the marketing mix factors affecting decision making of purchasing hydroponic vegetables are also significant. In addition, different occupation becomes one factor that affects consumers' buying decision of hydroponic vegetables in which it obtains statistical level at 0.05. The study of Titapa<sup>3</sup>, found that overall marketing mix factors are discussed at the highest level. Frequency in buying the product correlates to the age, marketing mix factors and distribution channels whereas buying behaviors of dietary supplement for brain and memory associates with occupation and income<sup>3</sup> similarly panida reported<sup>4</sup> on marketing strategies of hydroponic vegetables farms in Bangkok found that fresh food market entrepreneurs are the most suitable clients for this type of small business.

As a result, researchers give priority to study at which level consumers' opinions towards marketing mix factors influencing purchasing decision of hydroponic vegetables are so important and how consumption behaviors of first-year students from the faculty of Business Administration at St Theresa International College reveal. This is to improve the business and promote people to consume more hydroponic vegetables in order to avoid cancer according to Health Economic. At the same time, entrepreneurs should produce fresh product at a reasonable price and put up for sale all over the places for people's easy access.

### Research Framework

From relevant literature, the marketing mix factors is a useful tool that a business used to make buying decision and consumption behaviors of hydroponic vegetables to attain marketing objectives which are Product, Price, Place and Promotion<sup>5</sup> mentioned that consumption behaviors are processes involving a person's attitude and intention to buy or consume a product, service, idea and experience to meet the satisfying needs. The principles of Health Economic basically focus on the awareness, belief and correct practice in consumption of health and healthcare to obtain best option and most economical for good health. Even though, price of hydroponic vegetables is usually higher than non-hydroponic ones, however, according to Health Economic, it is the issue related to cost-effectiveness analysis. In other words, consuming hydroponic vegetables are more useful to health though price is higher<sup>6</sup>.

### Variables Definition

**Opinion** is a belief that is expressed by seen; knew and thought.

**Marketing mix factors** is a marketing tool to achieve marketing objectives of 4Ps which consist of product, price, place and promotion.

**Consumption Behavior of hydroponic vegetables** is an action to consume hydroponic vegetables.

**Health Economics** is a science which describes human's consumption behaviors of health and healthcare products by using economic reason to decide and choose service or product under scarcity sources with impartiality and effectiveness.

### Study Objectives

- To study opinions towards marketing mix factors influencing purchasing decision of hydroponic vegetables.
- To study consumers' behaviors of hydroponic vegetables.

### Research Questionnaires

- Opinions towards marketing mix factors influencing the purchasing decision of hydroponic vegetables from students of the Faculty of Business Administration at St Theresa International College.
- How Consumption Behaviors of hydroponic vegetables from students of the Faculty of Business Administration at St Theresa International College are.

### Research Extent

A Descriptive Research is utilized to study opinions towards marketing mix factors influencing the purchasing decision and consumption behaviors of hydroponic vegetables by 150 students during July 30-September 30, 2018. All the procedures are

approved by the St Theresa international college, institutional animal ethics committee (STIC/TH/NS/PH/11SMB/2019).

### MATERIAL AND METHODS

A sampling group in this study is 150 students who give opinions towards marketing mix factors influencing the purchasing decision and consumption behaviors.

### Specifications of Sampling

Thorndike's formula<sup>7</sup> is used to calculate a sampling group size i.e.

$$n = \sqrt{10K + 50}$$

n = Specifications of Sampling

k = Numbers of independent variables (4 variables)

used in Sampling group is  $\sqrt{10(4) + 50}$  or equivalent to  $\sqrt{90}$ . The study is gathered from real data of 143 pregnant women during July 30-September 30, 2018.

### Random Sampling

Purposive Sampling is used based on following criteria's:

1. They are first-year students from the Faculty of Business Administration of St Theresa International College.
2. Willing to co-operate by participating in this research.

### Exclusion Criteria

Unwillingness to participate in this research

### Research Instrument

- Personal Data Entry Form consists of students' sex, family's income and hometown.
- Questionnaires towards marketing mix factors influencing the purchasing decision of hydroponic vegetables consist of 16 questions of product, price, place and promotion issues. There are 5 choices for respondents to select as Very High, High, Moderate, Low and Very low and each choice is defined by marks i.e. 5, 4, 3, 2 and 1. Very High = 5, High = 4, Moderate = 3, Low = 2 and Very Low = 1. Orders of the awareness are divided into 5 levels i.e. Very Low = 1-1.49, Low = 1.50 - 2.49, Moderate = 2.50 - 3.49, High = 3.50-4.49 and Very High = 4.50-5.00. These criteria are self-produced by the researcher.

The questionnaire passes contents validity from three experts and reliability is sought from a sample group of 30 people who possess same qualifications as sampling group where Cronbach's Alpha Coefficient Value of 0.85 is obtained. A Consumption Behaviors of Hydroponic Vegetables Form used consists of 10 questions, each having 2 choices i.e. Correct = 1 and Incorrect = 0. Kuder Richardson 20's Reliability value of 0.85 is obtained from 30 clients who possess same qualifications as sampling group.

### Data Collection

After selection of sampling group based on specified qualifications, they are asked to answer the Personal Entry Data and the Questionnaire of opinions towards marketing mix factors influencing the purchasing decision of hydroponic vegetables which consist of 16 questions and 13 questions of Consumption Behaviors Survey Form.

**Data Analysis**

1. The analysis of Opinions towards Marketing Mix Factors is conducted by items and by sub-items using Descriptive Statistics i.e. percentage, average rate and standard deviation.
2. Data of Hydroponic Vegetables Consumption Behaviors is analyzed by using Descriptive Statistics consisting of more sub-items with percentage and standard deviation (item and opinion).

The majority of first-year students from the Faculty of Business Administration at St Theresa International College are females which is 95.3 percent. Most of them live in the North east which is 46.7 percent. The next below is from the Central, North and South which is 26.0, 9.3 and 4.7 respectively. The students' average income per month is Baht 2,001-3,000 which is 34 percent. The secondary is ≤ Baht2, 000, 3, 001-4, 000 and ≥ 4, 0001 which is 29.3, 20.0 and 16.7 respectively.

**RESULTS**

**Table 1: The average score towards opinions of marketing mix factors by items of first-year students at St Theresa International College**

Marketing Mix Factors	Score Range	Min-Max	$\bar{x}$	SD	Level
1. Product	1 - 5	1.75 - 5	3.95	0.54	High
2. Promotion	1 - 5	1.75 - 5	3.95	0.54	High
3. Price	1 - 5	2.25 - 5	3.73	0.07	High
4. Place	1 - 5	2 - 5	3.61	0.68	High

**Table 2: Opinions towards the marketing mix factors on Product, Price, Place and Promotion**

Items	Level of Opinions				
	Very High	High	Medium	Low	Very Low
<b>1. PRODUCT</b>					
1.1 Vegetables are fresh and green	32.2(46)	55.9(80)	11.9(17)		-
1.2 Various choices of vegetables to choose	22.4(32)	58.7(84)	18.2(26)	.7(1)	-
1.3 Various of dressings available	23.8(34)	44.8(64)	28.6(41)	2.8(4)	
1.4 Nice Packaging	20.3(29)	32.8(47)	45.5(65)	.7(1)	.7(1)
<b>2. PRICE</b>					
2.1 Price compared to quality is worth	23.8(34)	46.8(67)	28.7(41)	.7(1)	-
2.2 Big discount when buying in bulk	13.3(19)	32.1(46)	39.2(56)	14.7(21)	.7(1)
2.3 Clear price tag is available	27.2(36)	34.7(51)	31.9(47)	5.5(8)	.7(1)
2.4 Various choices of price.	23.1(33)	42.1(60)	27.2 (39)	5.5(8)	2.1(3)
<b>3. PLACE</b>					
3.1 Nice shop arrangement	16.8(24)	40.6(58)	37.7(54)	4.9(7)	-
3.2 Convenience to walk around the buying areas.	21.7(31)	44.7(64)	32.2(46)	1.4(2)	-
3.3 Permanent shops are available	19.6(28)	42.0(60)	32.8(47)	4.2(6)	1.4(2)
3.4 Close to residence	13.2(19)	24.5(35)	31.5(45)	24.5(35)	6.3(9)
<b>4. PROMOTION</b>					
4.1 Service and Advice are available	18.0(27)	33.6(48)	35.0(50)	12.7(17)	.7(1)
4.2 Discounts and Giveaways are available	12.8(19)	20.5(29)	40.8(58)	18.9(27)	7.0(10)
4.3 Advertising through social media	16.9(24)	31.7(45)	38.7(55)	10.6(16)	2.1(3)
4.4 Coupon Rewards: Buy10, Get1	11.9(17)	19.6(28)	32.2(46)	21.0(30)	15.3(22)

**Table 3: Percentage of hydroponic vegetables consumption behaviors from first-year students of St Theresa International College**

Hydroponic Vegetables Consumption Behaviors	Percentage	S. D
1. Used to eat hydroponic vegetables	95.30	0.21
2. Follow up news from Facebook	77.60	0.44
3. Used to eat hydroponic vegetables with dressing	72.70	0.47
4. Buying hydroponic vegetables in any season as appropriate	69.00	0.69
5. Consuming hydroponic vegetables for good health	65.00	0.46
6. Buying hydroponic vegetables from general market	64.30	0.49
7. Dressing consumed with hydroponic vegetables is low fat.	60.70	0.43
8. Expenditure on purchasing hydroponic vegetables is Baht 25-50	47.30	0.25
9. Follow up news from TV	44.00	0.45
10. Consuming hydroponic vegetables once or twice a week	20.30	0.85

From Table 1 Opinions towards marketing mix factors on Product and Promotion obtain highest priority with the average value of 3.95 and 3.95 (SD.54). Next on down is Price and Place with the average rate of 3.73 and 3.61 (SD .07 .68).

46.80 and 42.10 percent respectively. The issue on Promotion obtains high priority on an offering of coupon rewards/buy 10 get 1 where next on down is advertising through different medias which has the percentage of 40.8 and 38.7 respectively.

From Table 2: Opinions towards the marketing mix factors under Product has high priority on offering different types of vegetables for consumers' selection. The next below is fresh and green vegetables which is 58.7 and 55.9 percent respectively. The value of price compared to quality receives high priority while the secondary is given to different choices of prices to choose with

From Table 3: The rate of the topic used to consume hydroponic vegetables from first-year students at St. Theresa International College obtains high priority towards Hydroponic Vegetables Consumption Behaviors. The secondary is to follow up news through Facebook respective used to consume hydroponic vegetables with dressings. The orders of percentage rate are

95.30, 77.60 and 72.70 respectively. The two very low percentage are to follow up news from TV and consume hydroponic vegetables once or twice a week with percentage rate of 44.0 and 20.30 respectively.

## DISCUSSION

The result of the outcome discussion found that the Product and Promotion towards marketing mix factors receive high priority with the average percentage rate at 3.95 and 3.95 (SD.54). The next below is Price and Place with average rate of 3.73 and 3.61 (SD.07 .68) respectively. This indicates that the Product which is fresh and green as well as offer a wide variety of different vegetables to choose are the most important factors and Promotion offering coupon rewards or giveaways; Buy 10 get 1 receives second priority. The expenses on advertising through social media should be inexpensive and several permanent shops in different areas should be available.

This implication conforms to the study of Rata<sup>2</sup> which indicates that marketing mix factors on Product, Price and Promotion issues obtain very high priority towards consumers' purchasing decision of hydroponic vegetables in Bangkok. Additionally, it can be explained that sampling group prefers to buy products which offer several choices, freshness and cheap prices as well as convenience. The advertisements through social media such as, Facebook effects on consumers are purchasing decision ( $p$ -value  $\leq .05$ ) and conform to the study of Chutinun J<sup>8</sup>. Consumption Behaviors on used to consume hydroponic vegetables receives high priority from first-year students at St Theresa International School with average value of 95.30 SD.0.21. The secondary is to follow up news from Facebook having an average rate of 77.60 SD.0.44 respective used to consume hydroponic vegetables with dressings obtaining the value of 72.70, SD.0.47.

According to consumers' consumption behaviors of hydroponic vegetables based on Health Economic, the demand will increase when the price is cheap while supply should render simultaneously best benefits to consumers; for example, an offer of a wide variety of fresh, cheap or with discount of hydroponic vegetables including places where they are thoroughly which conforms to Wanisa's study<sup>9</sup> that the purpose of establishing Irene Hydroponic Vegetables Farm was to meet consumers' needs who wish to consume healthy food and live life in a hurry. The marketing strategies focus on presenting Thai-Western dishes together with hydroponic vegetables in the same area where consumers can conduct a survey.

## CONCLUSION

The distribution can be made through various channels, such as, online sale, at store fronts and provide reviews from reliable websites. This indicates that media's are significant sources to get update news about healthy and non-toxic products and in conformity with the study of marketing mix factors and Consumption Behaviors of hydroponic vegetables. The study of Klong Yong Community, Klong Yong Sub-District, Buddhamonthon District, Nakorn Pathom<sup>10</sup> found that marketing mix factors and consumption behaviors of hydroponic vegetables on Product receives the highest level at the average value of 4.62. Hence, entrepreneurs should consider offering fresh with various choices of hydroponic vegetables in order to meet student interests in healthcare and avoid cancer when taking non-toxic vegetables. Nevertheless, due to consumption behaviors on following up news from TV which has the average value of 44.00 SD.0.45 and consumption of hydroponic vegetables once or twice a week, having the average rate at 20.30 SD. 0.85 of Sampling

Group demonstrate that more public relations should be put more into actions for own good health and safety.

Opinions towards marketing mix factors are used to make purchasing decision of hydroponic vegetables on Product and Promotion obtains the highest average rate of 3.95 and 3.95 (SD.54). The next below is Price and Place having the average value of 3.73 and 3.61 (SD.07.68) respectively. Consumption Behaviors on the topic of used to eat hydroponic vegetables with percentage of 95.30 has the highest priority while next on down is to follow up news from Facebook and used to consume hydroponic vegetables with dressings at the average rate of 77.60 and 72.70 respectively. In view of Health Economic regarding demand and supply, consumers are willing to buy more hydroponic vegetables if the price is inexpensive whilst supply (entrepreneurs) should aims at consumer's most benefits i.e. an offer of a variety of vegetables, fresh, cheap and with discounts as well as advertising through Facebook using 4Ps factors consisting of Product, Price, Place and Promotion.

## Recommendation

The result of this research indicates that there is not too much difference in marks towards the marketing mix factors as each one is equally important in all aspects according to the priority i.e. Product, Promotion, Price and Place. However, entrepreneurs should consider offering fresh and qualitative vegetables with various choices, cheap and with discounts. In addition, it is recommended that they adjust their Promotion procedure by selling them more online and labeling details of benefits when consuming hydroponic vegetables to encourage consumers to consume more. Based on Health Economic, the demand increases if the price is low and the supply focuses on fresh, clean and safe products for consumers' most benefits to finally achieve market equilibrium.

## REFERENCES

1. Kotler P, Armstrong G, Philip K, Garry A. *Marketing Management, Analysis. Planning Implementation and Control* 9<sup>th</sup> ed. New Jersey, Prentice Hall International 1997; 98.
2. Ratha S, Chatinon K, Sunee W. Factor affecting Consumer's Choice on Hydroponic Vegetables in Bangkok. *Journal of Management Science Review* 2018; 19(1): 61-82.
3. Titapa P. Marketing Mix Factors Affecting Maintaining Brain and Memory Supplements buying Behavior of Consumers in Bangkok. Presented in Partial Fulfillment of requirements for Master of Business Administration Degree in Management (Thailand); 2012. p. 66-69.
4. Panida Tupwaree. The study of Marketing Strategies of Hydroponic Vegetables Farms in Bangkok Metropolitan Region. Bachelor of Economics Program in Business Economics, Thammasat University, Thailand; 2014. p. 1-22.
5. Solomon, Michael R. (*Consumer Behavior*. 3<sup>rd</sup>. New Jersey: Prentice Hall International. 1997; 98).
6. Petchnoi S. *Health Economics for Health Service* 5<sup>th</sup> Publication. Bangkok, Thailand, Chanmuang Printing House; 2016.
7. Thorndike, R. L. *Research Problems and Techniques*. Washington DC, U.S. Government Printing Office; 1947.
8. Chutinun J, Danopol H. Attitude Subjective Norm and the Involvement Product Affecting the Intentions to Buy the Green Products. *Journal of Management Science* 2015; 32(1): 65-90.
9. Wanisa B.A. Business Plan for Ailin Hydroponic Farm Restaurant via Online in Bangkok Thailand. Master of Business Administration Program in Marketing, Faculty of

Business Administration, Thammasat University, Thailand; 2015. p. 1-122.

10. The Marketing Mix and Consumer Behavior on Consuming Pesticide Free Vegetable: A Case Sub-district. Putthamonthon District Nakhon Prathom Province. (Accessed on 29 -12-2019). [http://www.elcls.ssru.ac.th/thun\\_ch/pluginfile.php/210/block\\_html/content/%E0%B8%9C%E0%B8%A5%E0.pdf](http://www.elcls.ssru.ac.th/thun_ch/pluginfile.php/210/block_html/content/%E0%B8%9C%E0%B8%A5%E0.pdf) (available).

**Cite this article as:**

Somboon Boonyakiat *et al.* Opinions towards marketing mix factors influencing the purchasing decision of hydroponic vegetables and consumer consumption behaviors from Health economic perspective. *Int. Res. J. Pharm.* 2020;11(4):43-47 <http://dx.doi.org/10.7897/2230-8407.110440>

Source of support: Nil, Conflict of interest: None Declared

Disclaimer: IRJP is solely owned by Moksha Publishing House - A non-profit publishing house, dedicated to publishing quality research, while every effort has been taken to verify the accuracy of the content published in our Journal. IRJP cannot accept any responsibility or liability for the site content and articles published. The views expressed in articles by our contributing authors are not necessarily those of IRJP editor or editorial board members.