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SWOT analysis and marketing strategies development of agricultural products for community group in Nong Chok, Bangkok, Thailand

Suwanmaneepong, S.[1*], Fakkhong, S.[2] and Kullachai, P.[1]

[1]Department of Agricultural Development and Resource Management, Faculty of Agricultural Technology, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand; [2]Department of Agricultural Management Technology, Faculty of Science and Technology, Phranakhon Rajabhat University, Bangkok, Thailand.

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Abstract This study developed marketing strategies of agricultural products for community group in Nong Chok, the eastern urban area of Bangkok, Thailand. Structured questionnaire survey was conducted with an indepth interview from 20 group members during October to December 2017. A SWOT analysis and TOWS matrix were applied to develop marketing strategic options. Based on the results of the SWOT analysis, strategies for agricultural product management were prioritized. The development issues including aggressive strategy, Nong Chok Community should undertake aggressive marketing by showcasing the branding, packaging, and labeling of the community producst. For diversification strategy, the community should encourage young generations to promote the agricultural products via social media, in order to continue working and developping community products in the future. For turnaround strategy, the community should concrete evidence development to demonstrate product properties for planting. For defensive strategy, the community should offer a specific promotion for a customer who buys a large quantity of product. After discussing on every strategic option, the group decided to establish a demonstrate planting plot by using their products compared to competitors. Moreover, they developed infographics to display product ingredients, and labelled their products with certificate qualification, repacking and re-branding products. Interestingly, some of them became a speaker, sharing knowledge amongst other agricultural groups which was a good chance to promote their products to customers.

Keywords: SWOT, Marketing strategy, Agricultural products, TOWS matrix, Nong Chok

Introduction

Undergoing rapid urbanization has an impact on land around the world (Peerzado *et al.*, 2018). Population and business/industry growth often take place in prime agricultural areas (Larson *et al.*, 2001). Under the expansion of urban growth, land used for agriculture around a city has a declining proportion

[*] **Corresponding Author:** Suwanmaneepong, S.; **Email:** ksuneeporn@gmail.com

(Satterthwaite *et al.*, 2010a). Agricultural sector is a key player providing food for population when facing a demographic change. By 2030, the population in agricultural areas is predicted to decrease to 3 billion due to the aging problem of farmers (Takagaki *et al.*, 2016), and the increase of de-urbanization, the proportion of the economically active population working in agriculture (Bairoch, 1988; Clark, 2009; Satterthwaite *et al.*, 2010b). This context may lead to the change in the pattern of agricultural production, more intensive production to land that remains in agriculture (Bentinck, 2000; Satterthwaite *et al.*, 2010b). At the same time, expanding and intensifying urban pressure accomplishes preserving agriculture, both farmland, and farmers that become controversial issue for increasing public interest (Larson *et al.*, 2001).

Bangkok, the capital city of Thailand, is the fifth largest in East Asia in terms of area and the ninth largest in terms of its population, approaching 10 million in 2010 (World Bank, 2015). Bangkokis currently facing population growth problem at a very rapid rate. Similarly, the aforementioned issue leads to a change in land utilization from agricultural to industrial and business, particularly in the surrounding area of the capital. Nong Chok District, located in the northeast of Bangkok, the area is about 236.261 square kilometers. The largest area is about one seventh of the total area of Bangkok. Of course, land use in Nok Chok is relatively competitive and undergoing changes. In addition, building industries affect housing and shelters, as well as the area near the national airport. High competition in land use with other industries leads to greater scarcity and higher land prices or rental rates; land resources are limited (Fakkhong *et al.*, 2018).

However, agriculture is the most important for people in this area, accounting for 80% of total people's occupation. Nong Chok District, Bangkok is one of the sufficient agricultural communities among the urban communities in Bangkok. People in this community live their life as if they were in a family; they bond with with nature (Ngambutsabongsophin, 2015). Undergoing of rapid urbanization and the aging of the population cause demographic changes in suburb areas and become an elderly society. These people still want to live in their own original area and do their farm. In addition, retired people want to shift to work in agriculture. Importantly, the people in this area want to preserve their lands for agricultural activities, and for their traditional way of life. However, due to land limited and facing of urbanization, farmers grow their plants intensively, and aim to get the maximum yield from available ressources. Like globally, doing agriculture in the urban area is highly intensive cropping systems where cultivation space is very scarce (Orsini *et al.*, 2013). Considering agricultural context in the area, farmers intensively use chemicals as well as the high rate of fertilizer to improve soil quality.

Due to the above-mentioned reasons, the community group in Nong Chok has an idea to do alternative agriculture by applying their local wisdoms, and without using chemicals. The community pays attention to the development of soil, since the soil is a major source of nutrients needed by plants for growth (NSW Government, 1992). If soil quality is good and sufficience for plants, it is not necessary to apply additional fertilizer, particularly, chemical one, because good soil will act as if good fertilizer. To use good quality of soil can lead to chemical-free agricultural productions. It is not only good for the environment but also good for growers and consumers. In 2009, the community began to develop agricultural products called "Ready Soil for Growing" (Figure 1.). Soil quality depends on its organic nutrients in which it contains (Kögel-Knabner and Rumpel, 2018), and this product contains required nutrients made from organic local materials. This product not only provides ready for soil to plant, but also generate income for community members.

Figure 1. Agricultural products of community group in Nong Chok, Bangkok

Community products have played an important role in traditional markets in Bangkok, Thailand (Wongleedee, 2015). It is necessary to find a more systematic and robust approach to the community management with marketing strategies. Marketing strategies are the result of the consumer behavior's investigations, which assist marketers in satisfying consumers (Wongleedee, 2015). Marketing strategy is a long-term, forward-looking approach to planning with the fundamental goal achieving a sustainable competitive advantage (Michael, 2008). Often viewed as a key step related to planning from marketing mix, SWOT analysis and TOWS matrix are used as a tool for establishing strategic plans, suggested as guidelines for agricultural products for community

group in Nong Chok, Bangkok, Thailand. SWOT analysis is deceptively simple despite the immense value it delivers. The system combines information from the environmental analysis and then separates it into two components: internal factors (strengths and weaknesses) and external factors (opportunities and threats) (Colgate, 2010). Regarding reviews of previous research, several studies attempted to use SWOT analysis and TOWS matrix for agricultural product strategy formulation, such as Javanmard and Mahmoudi (2008) used SWOT matrix to formulate strategies model for organic dried fig production in Iran. Ommani (2011) used SWOT matrix to prioritize farming system management in wheat farmers of Shadervan District, Shoushtar Township, Iran, and Baudino *et al.* (2017) applied SWOT analysis and TOWS matrix to identify production chains and environmental sustainability of kiwifruit and baby kiwi in Italy.

Accordingly, under the change that the community is facing, marketing strategy is needed in order to sustain their market position. The potential is needed (Pongsakornrungsilp *et al.*, 2008). Community products have great potential to enhance the community's livelihoods. Nevertheless, community enterprises often lacks of understanding of their customers, and marketing strategy development. In order to help and support the community, therefore, the purpose of the study was to examine the marketing mix of agricultural products, and developed marketing strategies of agricultural products for a community group in Nong Chok, the eastern urban area of Bangkok, Thailand. This research provided a guideline for the community entrepreneurs in improving and planning marketing strategies for their community products.

Materials and methods

This research applied SWOT analysis and TOWS matrix to develop marketing strategie options. SWOT can provide a good basis for successful strategy formulation (Kurttila *et al.*, 2000). The four elements of SWOT are Strengths (S), Weaknesses (W), Opportunities (O), and Threats (T).

SWOT analysis groups key pieces of information into two main categories (Brilhante and Skinner, 2015):

- Strengths and weaknesses are demonstrated by the internal factors include all of the 4 P's: product, price, placement/distribution, and promotion.
- Opportunities and threats are presented by the external factors, for instance demographic, economic, technological, political, legal, social and cultural factors.

TOWS matrix

The TOWS matrix or situational analysis is one of the most outstanding instruments in the framework of strategic analysis. This matrix is constituted by the concepts of strategic planning. The main advantage of the TOWS matrix identifies four conceptually distinct strategic groups (Weihrich, 1982) (Table 1).

Table 1. TOWS strategic alternatives matrix

	Internal Strengths (S)	**Internal Weaknesses (W)**
External Opportunities (O)	SO strategies (maxi-maxi) which enable a firm to use its strengths to maximize on its opportunities (the most suggested successful strategy to use) (Aggressive Strategic)	WO strategies (mini-maxi) focus on improving a firm's internal weaknesses by capitalizing on its opportunities (Turnaround Strategic)
External Threats (T)	ST strategies (maximini) utilize the internal strengths of a firm to reduce or avoid the impact of threats in the external environment (Difersivication Strategic)	WT strategies (mini-mini) aim at minimizing the weaknesses and threats facing the firm, (Defensive Stategis)

Source: applied from (Koonz and Weihrich, 2010; Mugo *et al.*, 2017; Rangkuti, 2014; Weihrich, 1982).

Data Collection

The data were collected from 20 community members who use the Satawan Agro-tourism Learning Center at Nong Chok as the office, for the meeting, produce their agricultural products. Finished products sold in the group leader shop which located in front of the learning center.

A mixed methods research strategy was employed in the form of face-to-face interviews and discussion groups from 20 community members on the Strengths, Weaknesses of the marketing mix of the community product, and Opportunities and Threats. Data was collected during October to December 2017. The participants were asked to rate the degree of their agreement to the statement the SWOT of agricultural products. The agreement scales are rated by Likert (1932) as follows: 5 =strongly agree, 4 = agree, 3 = neutral, 2 =disagree, and 1 = strongly disagree.

Data analysis

Mean and standard deviation of the participants' agreement levels toward SWOT statements were calculated from a five-point Likert scale. Whilst, data analyzing and interpretation were derived from the ranges of means of five-point Likert-type scales as follows: 1.00-1.49 = strongly disagree (SDA), 1.50-2.49 = disagree (DA), 2.50-3.49 = moderately agree (MA), 3.50-4.49 = agree (A), and 4.50-5.00 = strongly agree (SA). Three most important themes within each of the SWOT category were chosen to set marketing strategy in the TOWS matrix.

Results

The characteristics of member participants

As presented in Table 2., regarding the survey results, 20 members participated in SWOT of their agricultural production. On average, participants were 50 years old (min. 22 years, max. 72 years); majority of them were women. Most of them (25.00%) graduated from postgraduate level. The majority of participants stated that they do not have a background on SWOT (85%) and TOWS matrix (100%). This was the first time of them to hear and participate in order to develop the marketing strategies for their products.

Table 2. Characteristics of respondents (n = 20)

Characteristics	Frequency	%
Gender		
Male	13	65.00
Female	7	35.00
Age		
21- 30 years old	2	10.00
31- 40 years old	2	10.00
41 - 50 years old	5	25.00
51 - 60 years old	7	35.00
More than 60 years old	4	20.00
Mean 50.05, S.D. 12.09. Max 72.00, Min 22.00		
Education		
Primary school	1	5.00
Senior High school	3	15.00
Vocational Certificate	4	20.00
High Vocational Certificate	3	15.00
Bachelor	4	20.00
Higher Bachelor	5	25.00

Source: Survey data analysis, 2018

Table 3. SWOT themes ranked according to total importance score

SWOT statements	$\bar{X}$	*S.D.*	level	Ranking
Strenght	**4.37**	**.796**	**A**	
❖ Products contain enough nutrition for plant growth.	4.56	.640	SA	1
❖ The price of the products is appropriate compared to its quality.	4.48	.731	A	2
❖ Delivery service is available in the neighborhood area.	4.34	.819	A	3
❖ The components are clearly identified in a label.	4.32	.810	A	4
❖ Product receive a certificate of good quality.	4.26	.863	A	5
❖ There are suggestions on product properties during a sale period.	4.24	.913	A	6
Weakness	**4.22**	**.652**	**A**	
❖ Packages are inconvenient to use.	4.36	.754	A	1
❖ Production cannot be made in a large quantity of demands.	4.32	.895	A	2
❖ Products are high price compared to that of competitors.	4.17	.876	A	3
❖ Communication channels are not realtime.	4.11	.834	A	4
❖ Channels to buy the product are limited.	4.13	.799	A	5
❖ Product packages are not attractive.	3.78	.950	A	6
Opportunity	**4.03**	**.807**	**A**	
❖ Consumers increase awareness on chemical free.	4.15	.945	A	1
❖ The trend of urban vegetable growing is increasing.	4.10	.641	A	2
❖ There are supports from government support funds.	4.05	.759	A	3
❖ Research funds are provided to develop marketing and products	4.01	.826	A	4
❖ The demand on Ready Soil for Plant is growing.	4.00	.725	A	5
❖ Cooperative has research team from universities.	3.95	.945	A	6
Threat	**3.98**	**.944**	**A**	
❖ Transportation to deliver products to customer is not enough.	4.20	.834	A	1
❖ Young generation members are not ample.	4.15	.813	A	2
❖ Funding is Insufficient.	4.05	.887	A	3
❖ Government organization involvement is scanty.	3.80	1.056	A	4
❖ Technology for production is insufficient.	3.70	1.129	A	5

Source: Survey data analysis, 2018

SWOT analysis

Table 3 showed the five-point likert's scale rating of the measurement of SWOT statements in regard to agricultural products. Strenght had the highest mean (4.37) and Threat received the lowest mean (3.98) which were placed in agree (A) category.

Based on the results of the SWOT analysis, strategies for agricultural product management were prioritized by the discussion with group members. Selecting the three most important themes within each of the SWOT categories were choosen as demonstrated in Figure 2 as follows:

Strenght

Amongst the key themes identified across all four SWOT categories, “products contain enough nutrition for plant growth” was the most important strenght (S_1), (mean = 4.56). Fllowing this was “the price of the products is appropriate compared to the quality” (S_2), (mean = 4.48), and “delivery service is available in the neighborhood area” (S_3), (mean = 4.34), respectively. These findings indicated that the strenght of the community group was that their agricultural products can be developed to support decision-making.

Weakness

The members agreed that three main weaknesses in this study were that “packages are inconvenient to use” (W_1) (mean = 4.36), “production cannot be made in a large quantity of demands” (W_2) (mean = 4.32), and “poducts are high price compared to that of competitors” (W_3) (mean = 4.17).

Opportunity

The list of the top three most significant opportunities as rated my participants were composed of: the increasing of consumers awareness on chemical free (O_1) (mean = 4.15), the increasing trend of urban vegetable growing” (O_2) (mean = 4.10), and the supports of funds from the government (O_3) (mean = 4.05).

Threat

According to threats of agricultural products, the participant members discussed that lacking of transportation to deliver products (T_1) (mean = 4.20),

lacking of young generation members (T_2) (mean = 4.15), and insufficiency funding (T_3) (mean = 4.25) were the most three important treats for them.

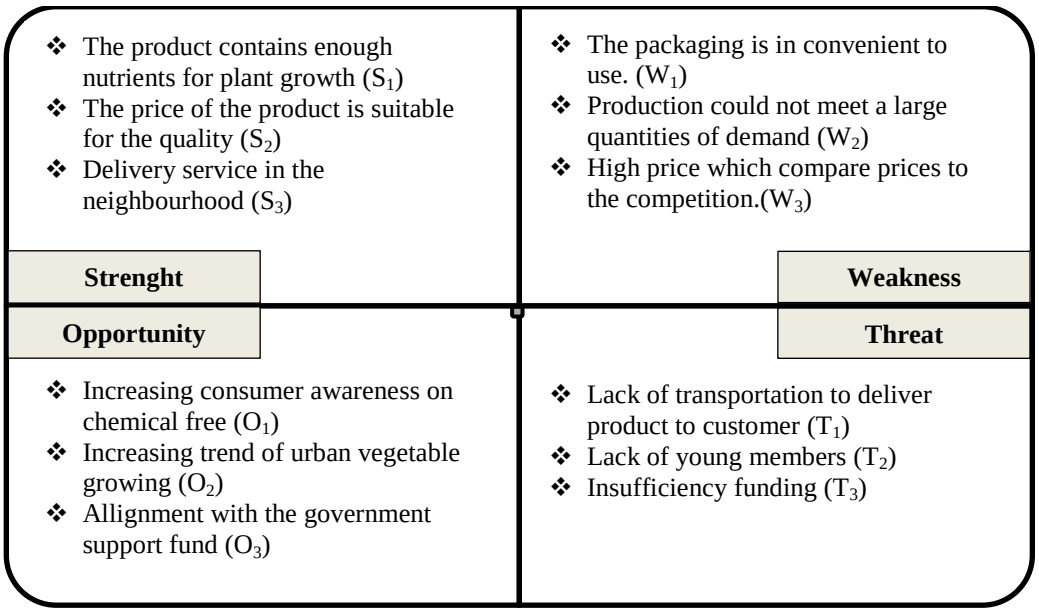

Figure 2. The top three most important themes selected within each of the SWOT categories

Strategy Formulation Using TOWS Matrix

The alternative strategies were developed after discussion and consideration with representative members of the community group in Nong Chok, Bangkok, Thailand by using TOWS Matrix. The results of the TOWS Matrix are demonstrated and key strategic dimensions were identified in Table 4.

Discussion

This study proposed important factors of SWOT analysis, and developed marketing strategies for the agricultural products of the Nong Chok Community, Bangkok, Thailand. Accordingly to the TOWS matrix, the result exposed that there were 12 strategies that can be implemented to develop a marketing strategies.

For aggressive strategies, Nong Chok Community should undertake aggressive marketing showcasing of the branding, packaging, and labeling of the community products; establish a demonstrate planting plot by using their products in order to compare to those of two product competitors. Moreover, infographics should be developped to display product ingredient informations.

Products should also be labeled with certificate qualifications, with repacking and re-branding of community products (Figure 3.).

Table 4. Strategy Formulation of agricultural products of the community group in Nong Chok by using TOWS Matrix

	Internal Strengths (S)	**Internal Weaknesses (W)**
External Opportunities (O)	**SO: Aggressive Strategies** 1. Making a sign of nutrients to support the demand of consumers (S_1O_1) 2. 2. Using QR code to access product information that are researched by educationalinstitutions ($S_2O_1O_2$) 3. Certifying products by academic institutions and having suggestions on product properties during a sale period (S_1O_3)	**WO: Turnaround Strategies** 1. Designing packages with clear price tags and adding a communication channel, such as Facebook ($W_1W_2W_3O_1O_2$) 2. Increasing communication channels about product property and ingredient together with establishment of demonstrate site to shown plants growing using different soil ($W_1W_3O_1O_2$) 3. Presenting enough product nutrition information to customers and setting up reasonable price with product quality, despite the higher price compared to competitors ($W_3O_1O_2$)
External Threats (T)	**ST: Difersivication Strategies** 1. Encourging young generations to involved by designing attractive packages, or infographic, promotion ofproducts through social media, as well as participating in training programmes (S_1T_2) 2. Redesigning products and providing cars for members by offeringtransportation fee for their delivery services (S_3T_1) 3. Cooperating with local governmental organizations by introducing products and group activites by organizing events or other marketing activities in their area to get funds (S_3T_3)	**WT: Defensive Stategies** 1. Offering specific promotion for customer who buy a large quantity of products (W_1T_2) 2. Targeting sell volume with service delivery and hiring transportation service to delivery products to customers ($W_1W_2T_1$) 3. Improving product quantity by investing in soil mixure technology to produce higher quantity (W_2T_2)

Figure 3. Branding, Packaging, and Labeling of community products

Hence, product promotion by using infographic may assist to enhance customer's understanding more about product properties and ingredients which would persuate customers willingly to pay for the products since they are able to identifying features of product value at a premium price, if those features are provided (Vassalos and Lim, 2016). The community should re-packing products to attract customers, because product packages are significant impact to consumer's buying behavior (Ahmad *et al.*, 2012).

For diversification strategies, Nong Chok community should encourage young generations to involve in the community group, since the average age of members is at 50 years old. However, their ability to access information or promote products through social media is limited. Whilst, nowadays, it is in the social media era, which have very high impact on customer's purchase decision (Prasad *et al.*, 2014). Social media growth represents an opportunity for business based on information sharing (Hofacker and Belanche, 2016). It is no surprise that young adults are using social networks more than older (Bitner and Albinsson, 2016). Young generations not only help to promote agricultural products via social media but also will continue to work and develop community products in the future.

For turnaround strategies, Nong Chok community should develop concrete evidence to demonstrate product properties for planting. This is a good and easy way to describe the values and preferences of products to the customers that products have plenty of nutritions required for their health with premium price matching with product quality; although it is higher than competitors' price. Demonstrate plot provides product information for a customers, which consumers can be influenced by the quality of product information (Bag *et al.*, 2017; Filieri, 2015). From this activity, interestingly, some of them became a speaker, sharing knowledge amongst other agricultural groups which were a good chance to promote their products to customers.

For defensive strategies, Nong Chok community should offer a specific promotion for a customer who buys a large quantity of product. For instance, if a buyer purchases products in a large volume, the community should provide transportation service to deliver products to customers. A target volume for selling with transportation service and hire transportation service to deliver product to a customer is needed. This strategy not only provides convenience for customers but also assists the community to create new customers, retain and maintain current customers through quality service delivery (Preko *et al.*, 2014).

In conclusion, this research provided the marketing strategies that enable Nong Chok community to develop sustainable strategies for their products because each community has its own strengths weaknesses, opportunities, and threats.

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