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A Structure Equation Modeling of Guidelines for Sustainable OTOP Production Management, Using Sufficiency Economy Theory

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ABSTRACT

Amidst violent competitions at present, each business aims to gain as high profit as they can, triggering worldwide economic crisis. His Majesty King Bhumibol's sufficiency economy theory is a way out to lessen such crisis. The purposes of this research were to investigate guidelines for sustainable OTOP production management, basing on sufficiency economy theory, and to develop a structure equation model with the obtained information. Both quantitative and qualitative methods were employed. The informants of the study were 500 entrepreneurs whose products were selected as best Thai OTOP.

The analysis of the model revealed that the guidelines most important in factors related to moderation, reasonableness, self-immunity, knowledge, and morality were respectively as follows: gradually expanding business, applying digital technology to marketing, imposing targets or clear indicators, sharing or transferring technology to the members of the group thoroughly, providing service for customers with integrity.

The analysis showed that the developed structure equation model passed the evaluation criteria, and was consistent with the empirical data. Its chi-square probability level, relative chi-square value, goodness of fit index, and root mean square error of approximation were 0.146, 1.087, 0.976, and 0.009 respectively.

Keywords: Structure Equation Model, OTOP, Sufficiency Economy Theory.

1. INTRODUCTION

Sufficiency Economy theory is His Majesty King Bhumibol's initiation royally given to Thai people in 1974. It is considered to be a development guideline based on the middle path, not underestimation, moderation, reasonableness, self-immunity, as well as applying knowledge and morality to live one's life (Chaipattana Foundation, 2015). Sufficiency economy can be taken as the basis of living, and thinking. It can also be applied to lead business to sustainable achievement (United Nations Educational, 2013).

Doing business solely for the highest profit is not a way of business management achievement. (Wheelen & Hunger, 2010, p. 120) In capitalism, business focusing on only accounting earnings as an indicator of success always encounters crisis as many of those in the past. They should be taken as lessons, and be reconsidered so as to find out new guidelines to run businesses and to develop the country sustainably. One of the ways that can help solving economic problems is His Majesty King Bhumibol's initiation on sufficiency economy, the theory worldwide admired and often mentioned by a number of academicians. (Sachs, 2010, p. 13; Sen, 2010, p. 27; Boothroyd 2010, p. 33; Warr, 2010, p. 49)

One Tambon One Product (OTOP) is a concept focusing on generating income in villages (Tambon) and communities each of which is encouraged to initiate one main distinguishing value added product or service, using local wisdom and resources. The product or service should be in consistent with communities' culture and way of life, and the market needs, basing on self-reliance. Assistance in modern knowledge, management, and internal and international markets is provided by the government (Srisuda, Poschanan, & Natpraput, 2015).

A way to sustain the OTOP business is to adopt His Majesty the King's sufficiency philosophy into the process. The main principles of this theory are of 3 folds; namely, moderation, reasonableness, and self-immunity all of which must be under 2 conditions, knowledge and morality (Chaiyanupong, 2016). This is considered a strategy appropriate to be used in OTOP production business to make it successful and sustainable.

2. PURPOSE OF THE STUDY

To investigate guideline model for sustainable OTOP production management, basing on sufficiency economy theory.

3. HYPOTHESES

Six hypotheses were imposed for testing as follows:

H1: Knowledge factor directly influenced self-immunity factor.

Klaus and Gita (2014) believed that there was a relationship between knowledge and immunity, and that knowledge can lead to ability to build immunity. By immunity, he means an ability to handle both internal and external changes (Michelle, Patricia, Chew-Hung, Saidul, & Youngho, 2017). Therefore, if one understands how to collect and synthesize knowledge, as well as create the new ones within oneself, save them in the knowledge bank for future usage either by analyzing, synthesizing, and evaluating, all of which are in the process of thinking and using brain, it will help them to create more self-immunity.

H2: Knowledge factor directly influenced reasonableness factor.

According to rationalism, it is believed that knowledge promotes reasonableness, and such knowledge is a true one (Charlie, 2014). Those who have knowledge and reasonableness can avoid unexpected situations (Statsky, 2012, p. 151). This is so because reasonableness can help one to realize what and what for he/she is doing (Michelle, Patricia, Chew-Hung, Saidul, & Youngho, 2017).

H3: Knowledge factor directly influenced moderation factor.

There are many ways to obtain knowledge; ie, from learning in classes, experiences, or from surroundings some of which can change ones' behavior and attitude so that some start to realize the moderation (Richard, & Jon, 2014). Moderation, here say, refers to sufficiency, not too much and not so small that one has to encroach oneself or the others (Jun, & Pak-sheung, 2015). Knowledge and moderation, therefore, directly influence each other.

H4: Knowledge factor directly influenced morality factor.

According to Rakchai (2011)'s study, knowledge level affects application of morality. Tom. (2016) also indicates that knowledge should be managed for creative usage. It must be coupled with morality.

H5: Morality factor directly influenced reasonableness factor.

A person believing in morality usually adhere to reasonableness. He/she sensibly decides whether a doing is right or wrong (Maura, 2017). This agrees with Allyn. (2013)'s belief in that morality has something to do with human spirit and social value, and that morality is a foundation of reasonableness.

H6: Morality factor directly influenced moderation factor.

Michelle, Patricia, Chew-Hung, Saidul, & Youngho (2017) mention the relationship between moderation and morality in a way that moderation is very important and is a basis of human life ruled by morality. Pavlova (2009, p. 81) also says that morality and moderation are inseparable. He believed that morality is a basis leading to moderation.

4. RESEARCH METHODOLOGY

This is of an inductive research type with mixed-methodology.

- 4.1 Seventy-five observed variables were investigated.
- 4.2 Endogenous latent variables consisted of moderation reasonableness, self-Immunity, and moral factors.
- 4.3 Exogenous latent variables comprised knowledge factor.
- 4.4 The population of the quantitative study was 10,090 entrepreneurs whose products were selected as best Thai OTOP of year 2012 (thaitambon, 2013). They were classified into 5 groups, food, refreshment, fabric and clothes, utensils/decorative/souvenir, and non-food herbs. 500 of them were randomly selected as it is believed to be most appropriate number for the structure equation model analysis (Field & Miles, 2010, p. 559).
- 4.5 The instrument used in this study was a Likert type questionnaire with five-point rating scale (David & Sutton, 2011, p. 259). Descriptive and referential statistics were used to analyze the data via SPSS software while AMOS was employed formultivariate statistical analysis and for development of structural equations modeling (SEM). Four criteria fore valuating the data-model fit were (Arbuckle, 2011, pp. 555-556): Chi-square probability level of > 0.05 , relative chi-square < 2 , goodness of fit index > 0.90 , and root mean square error of approximation of < 0.08 .

5. RESULTS OF THE STUDY

- 5.1 The data were collected from 5 groups of OTOP production business; namely, food, refreshment, fabric and clothes, utensils/decorative/souvenir, and non-food herbs most of which had been in operation for more than 10 years with more than 20 personnel.
- 5.2 The OTOP business recognized the importance of management based on the sufficiency economy theory guidelines at a high level ($\bar{X} = 4.23$). Five management guidelines in each aspect rated as most important were shown in Table 1 below.

Table 1
Management guidelines to make OTOP business, using sufficiency economy theory, sustainable

<i>Management guidelines for OTOP business</i>	\bar{X}	SD.	<i>Level of Importance</i>
<i>Moderation</i>			
1. Using local labor to generate work.	4.15	0.367	High
2. Making appropriate procurement of raw materials	4.34	0.759	High
3. Putting the first priority on using local raw materials	4.34	0.760	High
3. Putting the first priority on using local raw materials	4.33	0.803	High
4. Making the most of the limited existing resources in the business	4.30	0.818	High
5. Reducing unnecessary or luxurious expenses	4.22	0.827	High
<i>Reasonableness</i>			
1. Making shops/factories clean and hygienic	4.17	0.445	High
2. Providing customer data system for marketing benefit.	4.36	0.725	High
3. Building good relationship with customers and partners for mutual benefit in the long run	4.36	0.695	High
4. Constantly comparing own business with competitors for improvement	4.34	0.756	High
5. Taking local culture and traditions into consideration	4.30	0.688	High
<i>Self-immunity</i>			
1. Registering the product or brand to prevent duplication	4.27	0.755	High
2. Planning the working capital so as to prevent liquidity lack	4.15	0.438	High
3. Trying to keep old customer base and continuously find new ones	4.34	0.710	High
4. Planning to handle impacts and obstacles that may occur in the future	4.28	0.849	High
5. Keeping update accounting and financial records	4.26	0.836	High
<i>Knowledge</i>			
1. Understanding and planning taxation in line with laws	4.25	0.755	High
2. Sharing and transferring knowledge to group members thoroughly	4.25	0.788	High
3. Encouraging members to love to learn and to constantly self-develop	4.26	0.367	High
4. Being knowledgeable about the products that the group is producing	4.38	0.671	High
5. Utilizing knowledge and experience collectively gained from members in own business	4.37	0.688	High
<i>Morality</i>			
1. Abiding by public rules and regulations	4.37	0.708	High
2. Not attacking or maligning business competitors	4.35	0.772	High
3. Not seeking private interest from business causing damages in organization	4.34	0.727	High
4. Paying equal attention to customers and taking care of them equally	4.44	0.424	High
5. Giving customers right information of products, both advantages and disadvantages	4.54	0.666	Highest
	4.52	0.659	Highest
	4.52	0.660	Highest
	4.49	0.734	High
	4.49	0.713	High

5.3 The evaluation of the developed model before being improved indicated that the root mean square error of approximation passed the criteria and was consistent with the empirical data with the value of 0.041 while the chi-square probability level (0.000), relative chi-square (2.660), and goodness of fit index (0.825) did not.

The model was, therefore, improved, taking modification Indices into consideration as advised by Arbuckle (2011, pp. 107-109). After the improvement, it was found that the model's chi-square probability level was 0.146, relative chi-square was 1.087, goodness of fit index was 0.976, and root mean square error of approximation was 0.009, passing the evaluation criteria and was consistent with the empirical data as shown in Figure 1 and Tables 2 and 3 below.

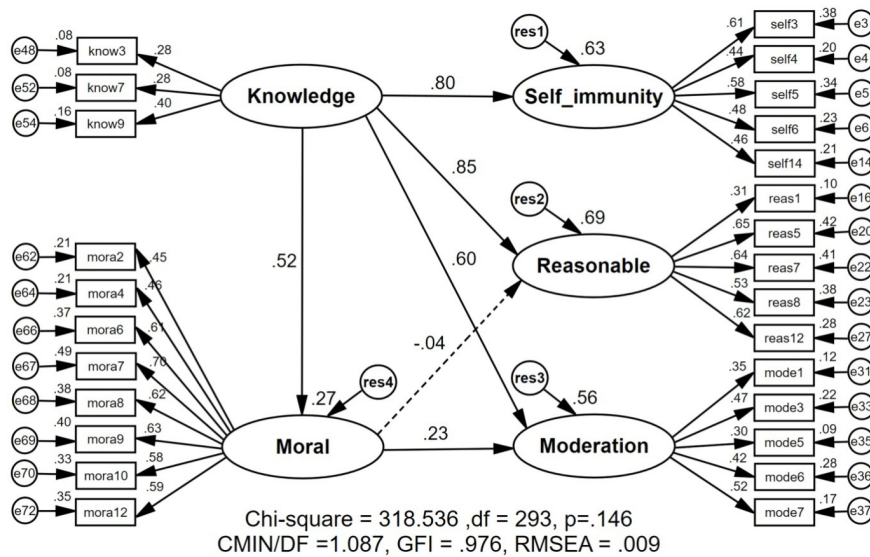


Figure 1: The developed structure equation model of guidelines for sustainable OTOP production management, basing on sufficiency economy theory, after the improvement

Table 2
Meaning of the abbreviations used in the guidelines for sustainable OTOP production management after the improvement of the model

<i>Abbreviation</i>	<i>Meaning</i>
mode1	Expanding business gradually
mode3	Managing the proportion of liabilities not to exceed the equity
mode5	Reducing unnecessary or luxurious expenses
mode6	Promoting products mainly made by local wisdom
mode7	Using community labor to generate work
reas1	Constantly comparing own business with competitors for improvement
reas5	Applying digital technology to marketing and general management
reas7	Creating differences to find new opportunities for business
reas8	Putting importance on product quality and impressive services
reas12	Designing attractive and useful package affecting decision to buy
self3	Setting target or index to evaluate business status periodically

(Contd...)

<i>Abbreviation</i>	<i>Meaning</i>
self4	Planning the working capital so as to prevent liquidity lack
self5	Finding joint-venture to reduce business risk
self6	Keeping update accounting and financial records
self14	Registering the product or brand to prevent duplication
know3	Being knowledgeable about the products that the group is producing
know7	Keeping track update information for business development
know9	Sharing and transferring knowledge to group members thoroughly
mora2	Setting up fair price, not taking advantages or being opportunistic on customers
mora4	Paying equal attention to customers and taking care of them equally
mora6	Producing products with good quality
mora7	Servicing customers honestly and sincerely
mora8	Not attacking or maligning business competitors
mora9	Operating business with transparency and accountability
mora10	Doing business without hurting or causing trouble to society
mora12	Taking care of group members with kindness and fairness

Table 3
Statistic values after the improvement of the developed model

<i>Variable</i>	<i>Estimate</i>		R^2	<i>Variance</i>	<i>C.R.</i>	<i>P</i>
	<i>Standard</i>	<i>Unstandard</i>				
	<i>Knowledge</i>					
Self_immunity	0.80	1.84	0.63	0.09	6.91	***
Reasonableness	0.85	0.85	0.69	0.01	5.39	***
Moderation	0.60	0.76	0.56	0.03	5.19	***
Moral	0.52	0.77	0.27	0.07	5.83	***
	<i>Moral</i>					
Reasonableness	-0.04	-0.03	0.69	0.01	-0.70	0.48
Moderation	0.23	0.19	0.56	0.03	3.45	***

5.4 Results of the hypothesis test

5.4.1 Knowledge factor directly influenced all four factors; namely, self-immunity, reasonableness, moderation, and morality, at the statistical significance level of 0.001. The values of their factor loading were 0.80, 0.85, 0.60, and 0.52 respectively.

5.4.2 Morality factor directly influenced moderation factor at the statistical significance level of 0.001, the value of its factor loading was 0.23. But it did not directly influenced reasonableness at the statistical significance level of 0.05.

6. DISCUSSION

Seven important issues arising from the results and the hypothesis test of this study could be presented, discussed, and concluded. Related literature would be brought to support and argue such issues as follows:

- 6.1 That morality factor did not directly influence reasonableness is considered as a principle arising from the acceptance of the facts, which is in line with Gillison, Northington, & Beatty. (2016)'s. He investigated salespersons' mental reaction against customers' bargains and found that even good and moral salesperson got annoyed with customers who tried to use reasons when bargaining. However, this finding does not agree with Ozbe, Yoldas, & Li-Ping Tang. (2016)'s. He found that being able to give reasons, moral manager could gain employees' organizational royalty.
- 6.2 Knowledge factor directly influenced reasonableness the most. Albors-Garrigos, Rincon-Diaz, & Lgartua-Lopez. (2016) in their study on knowledge change via reasonableness, also found that application of body of knowledge in organizations had to be undertaken reasonably so that such knowledge could be put into practice properly.
- 6.3 Expanding business gradually was found the most important guideline in the moderation factor. This was supported by Dusan, Haugen, & Popela (2017)'s study on new merchants' problems in advertisement, revealing that, while new merchants needed to make the highest sales for their business, they encountered the problem of high advertisement cost, so they had to gradually expand their business and paid for advertisement appropriately, in accordance with the business returns.
- 6.4 Application of digital technology to marketing and general management was found the most important guideline in reasonableness factor. This agreed with Monim (2017)'s study on application of Internet marketing to business. He investigated 570 businesses and found that most businesses used the Internet channels such as Facebook to communicate with customers. The reason behind this was that they wanted to create marketing innovation that would be beneficial to compete with competitors.
- 6.5 Setting targets and index for periodically evaluating business status was found the most important guideline in self-immunity factor. This finding was quite similar to that of Manu & Puneet (2017)'s who examined capital expenditure, capital structure, and turnover target in production industry and found that businesses had to set targets in their operation plans and evaluate the operation periodically. Targets had to be set on required sales and profits, as well as on every business operation.
- 6.6 Sharing or transferring knowledge to members in the group thoroughly was found the most important guideline in knowledge factor. This finding accorded with Yeunjae & Jeong-Nam (2017)'s who study the relationship of organizations and personnel in relation to human resource management. Data were collected from 528 personnel. He found that to build up knowledge body for personnel in organizations, the organizations had to encourage the relationship among colleague through knowledge transfer, exchange, and share. This would lead to effectiveness of operation in organizations.
- 6.7 Servicing customers honestly and sincerely was found the most important guideline in morality factor. Diallo & Lambey-Checchin (2017) investigated customers' perception on retailers' morality in France. Data were collected from 689 consumers. Their study revealed that consumers perceived retailers' morality as related to both responsibility and business reputation and this helped create customers' royalty and confidence of such retailers.

7. SUGGESTIONS

Some suggestions can be proposed according to the results of this study as follows:

- 7.1 Amidst violent business competitions at present, each business aims to gain as high profit as they can, triggering worldwide economic crisis. His Majesty King Bhumibol's sufficiency economy theory has been royally given to Thai people since 1974 is considered a way out to lessen such crisis as it is a development guideline that is based on the middle path, not underestimation, moderation, reasonableness, self-immunity, knowledge, and morality. The sufficiency economy theory does not aim to gain the highest profit, but to living sustainably. It is, therefore, can be applied to every type of business that need stability and sustainability.
- 7.2 The advantage of OTOP products is that they are made from local wisdom. They are, however, not well-accepted by consumers because they do not trust to use them as Thai people generally believe that goods made by local people are not in a good quality. No creditability is, consequently, given to them. This problem should be solved by improving images and making local wisdom international or global. Technology and innovation must be used in production to add more value to the products and to distinguish them from others with quality, but maintaining value, identity of local wisdom, charms of local culture, and usefulness. Modern and international look should be designed. And last but not least, the product standard should be certified by acceptable international organizations.
- 7.3 OTOP entrepreneurs' potential in management should be developed. Modern media technology that can describe the local wisdom and distinguish the products' content from the others' should be used to increase market channels and facilitate consumers to easily buy the products. Creating new market channel such as one stop service digital marketing, online sales, e-commerce linked with well-known websites like Lazada, Alibaba, Etsy, for OTOP products is recommended. OTOP digital website should be set up.
- 7.4 New OTOP entrepreneurs should be encouraged. Knowledge of science, technology, and innovations should be provided for them so that they can choose appropriate technology and innovation to design and develop the products to meet the market demand. New entrepreneurs should be equipped with knowledge of extension of the original concepts, how to make new prototype for commercial production, business planning for new entrepreneur incubation to be ready to step into business world, as well as leveling the community products into strong small and medium enterprises.
- 7.5 It is suggested that the sales of the OTOP products be extended from local to urban areas. The government sector should behave as a medium granting local entrepreneurs opportunities to sell their products in shopping centers in town. OTOP products should be made into franchise prototype as a franchise model.
- 7.6 Professional OTOP entrepreneurs should be developed. Equip them with knowledge of management, package design, marketing, business plan formulation, access to capital, innovation creation, technologist development, and application of sufficiency economy theory to their business operation. The most important thing is that they have to run their business with morality

and honesty, to impress their customers so that they repeat the buying and tell the others about the products, leading to sustainably successful business.

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