

Chapter IV

The Analysis of Competitive Advantage of Silk Weaving System in the Model Village

To continue from previous chapter, there is the first analysis of competitiveness in silk cloth production in the model village by using cluster performance analysis. The result from this analysis is added in SWOT Analysis.

Then, Factor Conditions and Demand Conditions determinants from Diamond Model provide the Strengths factors to become the internal environment/factors for the SWOT analysis, so does with the result from cluster analysis. Then Opportunity, most created by government, provides the external environment/factors to complete the SWOT analysis. Lastly, these results are deployed in the process of Goal Formulation to further formulate the strategy, Different Strategy, which is finally compatible to the National OTOP framework.

4.1 Cluster Performance Analysis in the Model Village

After examining the information of silk weaving process and the operational processes in the model village in previous chapter, the next step is to analyze this data to create the cluster performance analysis. The analysis will show the existence or absence of the internal cluster relationship, within Noanjig weaving group, and/or the external cluster relationship, with some concerned organizations, in each steps of silk weaving processes and the related activities.

Table 12: Check list of Cluster Performance in Silk weaving Process/Related Activities in the Model Village

Silk Weaving Processes/Related Activities	Cluster Relationship Analysis		Related Organization
	Internal	External	
Mulberries planting and silk worm growing	--	--	--
Reeling-off silk yarn or buying raw silk yarn	--	/	the silk yarn shop, Ruen Mai Bai Mon
Degumming	/	--	--
Spinning	/	--	--
Dyeing:Natural	/	/	Mulberry and Silk Research Center, Surin province.
Preparing Warp Thread	/	/	Co-operative Supporting Department and The Golden Jubilee Royal Goldsmith College
Preparing Weft Thread	/	/	Co-operative Supporting Department and The Golden Jubilee Royal Goldsmith College
Weaving by Technigues	/	/	Co-operative Supporting Department and The Golden Jubilee Royal Goldsmith College
Managing the Noanjig Silk Weaving group by the leader	/	/	All organizations
Strong relationship with financial institution	--	--	--

From the above tables, the conclusions are divided into 3 categories according to the level of relationship:

Strong Cluster Performance, the existence in both internal and external relationship, will be the representative for Strength factor. These silk weaving processes/related activities consist of Dyeing:Natural, Preparing Warp Thread, Preparing Weft Thread, Weaving by Techniques and Managing the Noanjig Silk Weaving group by the leader.

Medium Cluster Performance is the existence or absence in either internal or external relationship. These silk weaving processes/related activities consists of Reeling-off silk yarn or buying raw silk yarn, Degumming, and Spinning.

Weak Cluster Performance, the absence in both internal and external relationship, will be the representative for Weakness factor. These silk weaving processes/related activities consist of Mulberries planting and silk worm growing, and Strong relationship with financial institution.

The summary of this analysis will be used in SWOT analysis. Then, the next topic is the fulfillment of the Strengths factors in SWOT analysis, the results from Diamond model analysis.

4.2 The Analysis of Competitive Advantage in Silk Cloth Production in Noanjig Village

In this study, the competitive advantage theory, Diamond model, by Michael E. Porter is used to analyze the competitive capability in textile industry especially in silk cloth. The study of silk cloth can be analyzed into Diamond Model's determinants.

The main information in this section of competitive advantage analysis was brought from the model village, Noanjig village, Surin Province by the interview with the leader of Noanjig weaving group, Mrs. Juntee Boonkam, and the group of expert weavers all consist of 20 people using the questionnaire. This is the village that can be the interesting model of developing and dynamic silk weaving village. Here below are the factors determined by the Diamond model.

4.2.1 Factor Conditions

4.2.1.1 Natural Resources

The raw material used in silk production system in Noanjig is acquired from local area. Silk yarns, natural color dyes and weaving tools are local materials.

Silk yarns, normally Golden silk yarn, used in production process are bought from reliable supplier, Ruen Mai Bai Mon, in Muang district, Surin province. Natural color dyes materials, for example, Ebony or Ma Klua, Pradoo, Anchan flower, Ebony and Lac, are found in the model village or local area.

Anyway, those materials are inconsistent and sometimes lack of stable quality because of some reasons, for example, the natural color dye materials are mostly brought from trees fruits, leaves or barks which can be produced in different quantities according to seasonal factors.

4.2.1.2 Technological and Quality Control System

The quality control in silk production system is still under-developed, for example, the weaving processes are the free time for weavers after finishing their main job, rice cultivation. For that reason, the weaving time in each day is not stable. The other example is the switching of weavers. Some silk shawls are started to weave by one weaver, but when she has to do some personal businesses, for example, participating in wedding ceremony or the relatives' funeral, those silk shawls are passed to be finished by another weavers. Weavers have their own weaving techniques and they have different weaving skills. This situations cause inconsistent weaving quality in just one piece of silk shawl.

There are still no standards in silk yarn size control, tools making production, natural color dyes saturation or darkness control. Weavers select the size of silk yarn by dividing silk yarn size into number of twisting, Kuab 2 or 2 twisted yarns, Kuab 4 or 4 twisted yarn. In fact, there is the systemized silk yarn size regulation, identified by Minister of Agriculture and Co-operation, using Deneer measurement varying from 18-30 denegers to determine the size of silk yarns. This information is not regularly realized by

weavers when selecting silk yarns. The other main problem comes from the standard of natural dyeing color. The dyeing process using natural materials is extremely difficult to set up standard color. One color, for example, Blue color can be different in every time of dyeing. The reason is the slight variation of the quantity of material, the amount of Indigo, due to the lack of accuracy in measurement process. The other reason is from the seasonal difference of natural output which could differentiate the color of natural dyeing material, for example the drought season make those materials produce darker color than in the rainy season.

These factors require further development from high standard organizations to make more systemic and scientific standard system, for example the ready-made natural dyeing materials in the exact quantity.

4.2.1.3 Human Resources and Labor Forces

The Silk cloth production strategy in the model village is still the labor-intensive production scheme. Most weavers in this village have been educated in the local school less than basic education scheme. Most of them got a chance to go to school just 3-6 years.

However, they have been taught later about skill improvement in silk production in OTOP project. They are now able to develop their skills in every aspect in silk production to improve production capability. Weavers in Noanjig, before entering OTOP project, can weave only in Surin traditional silk cloth using local patterns, for example Am prom, La Berk or Ratchawat. Nowadays, except traditional weaving patterns, they can weave in additional patterns, for example Kaew Ching Duang or Bang Rose, by using other techniques such as Brocaded/Pha Yok or Overshot techniques.

4.2.1.4 Skills and Techniques Accumulation

Although weavers have learned how to weave since they were children, these skills must be improved continually. Some weavers who can improve their skills can make new kind of silk designs and new type of silk weaving, for example, they can applied their weaving techniques by adapting their products. Traditional silk clothes,

men bathing cloth or women loincloth, are changing sizes and textures to become silk shawls and scarves.

4.2.1.5 Tools and equipment

The silk weaving tools and equipments are mostly made and designed ages ago. Some of these tools are broken and used in improper status.

The weaving tools, for example, looms or reeds are used more than 10 years. Some of them are rusty, these can make flaws or spot on silk cloth when weaving.

4.2.1.6 New Product Research and Development

Most weavers do not have time and money support to create new products. They have produced the silk products to make their standard living.

4.2.1.7 Designs

Some traditional designs have been developed and applied by designers in OTOP project.

They can apply and adapt the traditional patterns, for example, creating new combinations of colors, sizes of silk yarn or mixing up patterns to produce the applied traditional patterns. Some designs are newly created in OTOP project, for example, Gled Pim Sen or Look Kaew Foong.

4.2.1.8 Infrastructure

Most weavers produce silk cloth in minimum capacity of infrastructure. Most weavers are working in improper environment in working place, for example, insufficient light while working in night time or using water from rain to dye silk cloth which can cause contamination of the mixture of natural dyeing materials.

4.2.2 Related and Supporting Industries

4.2.2.1 Vertical and Horizontal Industries Linkage

Silk weaving production in Noanjig is currently building relationship with both backward and forward linkages organizations.

Backward linkage organizations provide raw materials for the village. Related organizations such as Office of Agriculture in Surin or North Eastern region cooperate with weavers about proper kind of silk worm breed.

Weavers have started to deal with credible customers or dealers who can distribute their products to many countries.

About horizontal industries linkage, there are some companions to connect with. The network villages are in Surin province, for example, Ta Kui or Nong Koo weaving village, or in other province such as Lung Pradoo and Kok Pluang weaving group in Nakhon Ratchasima province. Weavers in Noanjig contact to weavers in another village to exchange or share some knowledge between them. They discussed about weaving techniques, materials and management.

4.2.2.2 Supporting Organization and Education Support

Referred to previous chapter, there are some organizations which support and provide information and useful help to weavers in OTOP project.

Co-operative Supporting Department, Ministry of Agriculture in Co-operation with The Golden Jubilee Royal Goldsmith College, Office of Vocational Education Committee Board, Ministry of Education educate weavers about how to improve weaving processes, tools and designs. Mulberry and Silk Research Center, Surin province, provides the training about natural dyeing process.

4.2.3 Demand Conditions

4.2.3.1 Sophisticated and Demanding Local customers needs

Local market of high quality silk cloth is specific market. Few customers can afford to purchase hand-made, high quality, natural-dyed and unique silk products.

Customers in this niche market consist of Thai customers, tourists from many countries and foreigners who stay to work in Thailand.

4.2.3.2 Domestic Customers' Perception on level of silk products

Customers' perception on level of silk products is the very important topic for the product like silk cloth. There are plenty of levels of silk products divided by quality of raw materials, weaving techniques, designs, dyeing colors and production process.

Weavers in this village have tried to produce high quality of hand-made, natural dyed silk that use silk yarns from local area and they have also used various kind of techniques and designs to make the wonderful and unique silk cloth.

4.2.3.3 Substitute Demand

Substitute demand from abroad can compensate demand in domestic market. Foreign Customers who have a chance to see silk products are interested to buy new, applied and better quality products (as shown in the upcoming pictures).

4.2.4 Firm Strategy, Structure and Rivalry

4.2.4.1 Goals, Objective and Attitude of Silk Cloth Production

Weavers have always started weaving in their families. Parents teach their children to weave because it will establish the basic skill in their living standards.

New generation weavers are proud of this culture and they also extend and develop their weaving skills to make their products better.

4.2.4.2 Production Strategy

Silk weaving in most villages including Noanjig is still need to be developed about production process and quality control. Product designs are not systematized. There are lacks of measurements in almost every step in production processes. They estimate or guess the amount of material to dye silk cloth into the required color. They have to assign more than one weaver to make silk cloth in a loom for an urgent order. The cutting of the cloth can also make errors. The various factors can ruin the quality of silk cloth from small defects to the spoiled products. This is the important topic in making hand-made products.

4.2.4.3 Marketing Strategy

Some silk products are selected to be OTOP Product Champion (OPC). They will receive better opportunity to expose to broader market. Silk products in this village can not reach that level now. Weavers still wait for their customers to visit their village. They lacks of marketing strategic planning.

4.2.4.4 Organization Management Strategy

Organization chart in weaving village is generally simple. There is the leader of the village and the rest are the weavers in the village. The leader receives orders from customers and assigns tasks for each of weavers to do. The efficiency and effectiveness of weaving process depends on the management ability of the leader.

4.2.5 Role of Government

Referred to many previous explanations, some government organizations help the village to develop their skill or solve some problems. However, there are still uncertain about the sustainable cooperation between the village and government organization.

4.3 SWOT Analysis

Since Diamond's model can explain the competitive advantage of Noanjig silk weaving groups by analyzing the required 2 determinants. Then, in each determinant, there are some factors which are the strong points for producers. These are defined as *advantage* or *strengths*. On the other hand, the weak factors in each determinant are *disadvantages* or *weaknesses*. Cluster performance analysis also provides the strength and weakness factor for SWOT analysis.

To further deploy the results from diamond's model. Only Strengths in every determinant are re-grouped and categorized. Then, the internal environment/factors of the weaving village are formed by using the summary of strengths. Lastly, the external environment/factors, only Opportunity, most created by Government in OTOP project, are the additional views to be merged to form SWOT analysis, only the positive present and future factors. The result from SWOT analysis then later used in the next steps, Goal Formulation and Strategy Formulation.

4.3.1 Internal Environment/Factors

4.3.1.1 Strengths

These silk weaving processes/related activities consist of Dyeing:Natural, Preparing Warp Thread, Preparing Weft Thread, Weaving by Technigues and Managing

the Noanjig Silk Weaving group by the leader will be the representative for Strong Cluster Performance.

The raw material used in silk production system is acquired from local area. Weavers are now able to develop their skills in every aspect in silk production to improve production capability. Some weavers who can improve their skills can make new type of silk weaving and new kind of silk designs. Some traditional designs have been developed and applied by educational institutes and designers.

Silk weaving production in Noanjig is currently building relationship with both backward and forward linkages organizations. Weavers in Noanjig contact to weavers in another village to exchange or to share many stuffs between them. Educational institute from Ministry of Education cooperates with the village to educate them about how to improve weaving processes, tools and designs.

Customers in this niche market consist of Thai customers, tourists from many countries and foreigners who stay to work in Thailand. Therefore, weavers in this village have tried to produce high quality products to serve their customers. Foreign Customers who have a chance to see silk products are interested to buy new, applied and better quality products.

New generation weavers are proud of this culture and they also extend and develop their weaving skills to make their products better.

4.3.1.2 Weaknesses

These silk weaving processes/related activities consist of Mulberries planting and silk worm growing, and Strong relationship with financial institution will be the representative of Weak Cluster Performance.

Raw materials from local area are still not enough quality and consistency. The quality control in silk production system is still under-developed. There are still no standards in almost every production process, material and tool. The silk weaving tools and equipments are mostly made and designed ages ago.

Most weavers in this village have been educated in the local school less than basic education scheme. They do not have time and money support to create new products. Most weavers produce silk cloth in minimum capacity of infrastructure.

Few customers can afford to purchase hand-made, high quality, natural-dyed and unique silk products. There are various kinds of silk products and their quality. This sometimes may confuse customers' perception on level of silk products.

Silk weaving in most villages including Noanjig is still need to be developed about production process and quality control. There are lacks of measurements in almost every step in production processes. Silk products in this village can not reach OPC level. Weavers still wait for their customers to visit their village.

The efficiency and effectiveness of weaving process depends on the management ability of the leader.

4.3.2 External Environment/Factors

4.3.2.1 Opportunities

Hand-made and natural-dyed silk cloths are still the potential market. Customers who need something different from mass product will be interested in unique products.

Textile industry is promoted by government. There are major plans to develop textile industry. Silk cloths are important products in this industry. Government has promoted and supported SMEs such as OTOP scheme. There are plenty of opportunity to do business by SMEs for example privilege by SMEs bank, business consultant by related government organization and OTOP trade fairs that often occur at Impact Arena. OTOP Brand name also should be promoted by government.

Standards in silk products have been started to set up. Labels of Native Thai Silk or Thai Silk 100% will be increasingly guaranteed by related government organizations.

Customers who seek for different products will satisfy hand-made silk product more than machine-made ones. Information was gathered from customers for products improvement.

4.3.2.2 Threats

Discontinuities in input cost: This is the topic that affects the cost of production process especially the oil price surge.

Worldwide market penetration by *China*: Following the end of quotas regulating the global apparel trade starting from 2005, Chinese textile exports to the global market have raised in a numerous figures. Both textile export and import countries have been affected in this situation. Major textile importer such as U.S. has warned China that they may implement safeguard mechanisms to restrict its booming textile exports to U.S. market to protect internal textile industries. Many competitors in textile export market lose their market share to China. Most products from China are commodity items and cost leadership. China has lower labor and infrastructure cost than another countries.

Concerns on regulations: Many E.U. countries have strictly monitored their import products about environment concerns and quality standards. This will affect some topics such as dyeing colors, sources of silk yarn used.

Customers' misunderstanding about levels of silk products is the important threat. Most customers do not separate natural-dyed from chemical-dyed or simple techniques from complicated techniques. They will not understand the price different from the referred groups of products.

Hand-made products are limited by order quantities. Production capacity can not be changed according to the amount of orders.

4.4 Relationships among the determinants

The relationships between determinants can sometimes be the stimulus for competitiveness in production system. This analysis will be used as guidelines for improvement in the next chapter.

4.4.1 Influences on Factor Creation

Silk products industry could have competitive advantage if advanced and specialized factors are created, upgraded and cumulated by effective factor creation mechanisms.

To stimulate these mechanisms, silk products especially traditional silk cloth should be critically viewed as prestigious or national priorities, because the attention of individual, institutions, and government entities is most attracted.

4.4.2 Influences on Demand Composition and Size

Home demand can be larger and more sophisticated. When customers have been educated about silk cloth production processes, they will understand the product values. These customers will become more complicated and complex. Weavers should have to develop their products into higher standards to meet customers' needs. These cycles will end up making better products with higher price.

To make these cycles effective, complicated home demand can be influenced by factor conditions, especially factor-creating mechanisms. The illustrative example is silk weaving school. The students in this school both from local people and foreigners will provide potential demand for silk products.

4.5 Linkage of Diamond Theory and SWOT Analysis to Criteria of OTOP Products

This linkage illustrates the relationship between many factors in the model village through the explanations by using the selected model. The linkage has many steps. It will describe how OTOP product criteria are the answer for local product to become exportable.

Since employing Diamond Theory to analyze about 4 determinants in silk weaving in Noanjig, these analysis's results can be re-grouped and concluded into 2 categories, Strengths (S) & Weaknesses (W). Then, strengths factors determinants(S) provide the Supply Side for SWOT analysis. This result will be used in the next topic.

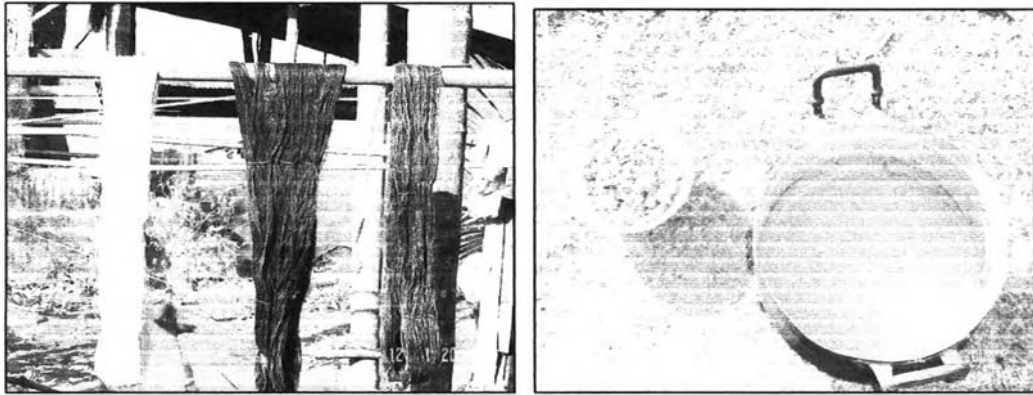


Figure 10: The raw material used in silk production system is acquired from local area (Strengths).



Figure 11: Weavers are now able to develop their skills in every aspect in silk production to improve production capability (Strengths).

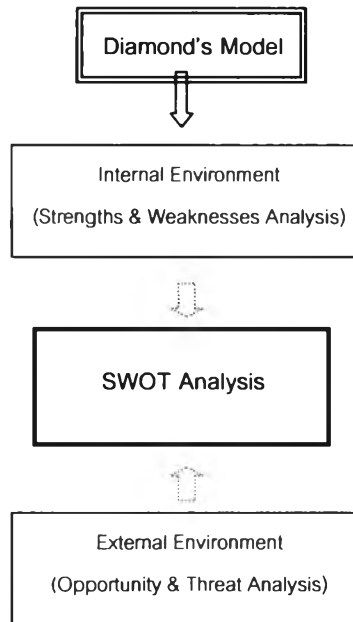


Figure12: Foreign Customers who have a chance to see silk products are interested to buy new, applied and better quality products (Strengths). Gathering information from customers for improving Products (Opportunity factors, O)

4.6 The Analysis Result of Hypothesis Model

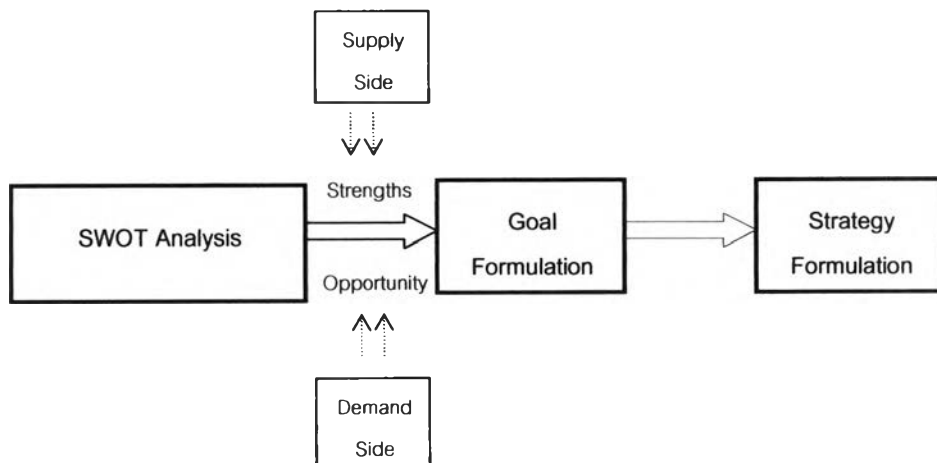
This is the verifying process whether the analysis results are compatible with the hypothesis or not.

Continuing from last topic, after Supply Side has been answered by the Diamond theory, the remaining problem, Demand Side, will be tackled by SWOT analysis. The Demand Side has 2 categories, Opportunity (O) & Threat (T). Lastly, Opportunity will be the representative of the Demand Side.



The SWOT Analysis Process
(Employing Internal Environment/Factors from Diamond's Model Analysis)

Then, goals are formulated. Goals are formed by the merge of Supply Side (Strengths) and Demand Side (Opportunity). The existing Strengths are matched to the required Opportunity.



The Business Strategic-Planning Process
(Kotler, Marketing Management, 2000)

After indicating goals to achieve, strategy is a plan for getting there. There are 3 generic competitive strategy, according to Michael E. Porter. Considering local products, the most appropriate strategy for transforming to OTOP product is *Differentiation* strategy.

Then, the Differentiation Strategy is finally compatible to the National OTOP framework. Finally, the appropriate examples of how to transform S & O to become *Differentiation* strategy and finally be compatible with National OTOP Product Champion Selection Framework, consists of 4 frameworks, are:

