

Strategy for Capability Development of Knitting Small Medium Enterprises Using SWOT Analysis

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Abstract

The Small Medium Enterprises of Knitting are small business actors who produce knitted clothes such as cardigans, sweaters, and jackets. The SME knitting actors currently operated their production on the knitting industries center that become their residence and the source of their income. The number of SME knitting actors has decreased every year due to the weak business capabilities. The improvement are needed to increase the capabilities to run business with the effective strategy. This paper aims to develop strategy to increase competency and business capability for SME of knitting actors. The method using SWOT analysis which describes their strength, weakness, opportunities, and threat in existing business. The result shows that the SME knitting business position is in third quadrant which is Weakness-Threat (WO) strategy. It can be concluded that it is essential to repair their weakness or minimize weakness and to avoid the business threat. The strategy for developing capabilities of the SME knitting is by minimizing weakness with the priority of ensuring the continuous supply of fabric material, upgrading the obsolete machine, and improving labor skill. The strategies to avoid business threat especially from imported clothes and competitors are improving the quality of knitting clothes, and running the effective production to press the production cost.

Keywords

Knitting, SME, Capability, Strategy, SWOT

1. Introduction

Bandung knitwear industry is developing now and the production is able to reach the international scale; it is on prospective categorized because the small industry is a sector which has the potential to improve the regional economy. Based on data from <http://jurnalmedia.com> in 2013, Binong Jati Knitting industrial center is one of the industrial center in Bandung which very potential besides other industrial centers such as Cibaduyut industrial shoes center, Cibuntu tofu industrial center, Cigondewah fabric industrial center, Sukajadi puppet industrial center, Cihampelas jeans industrial center, and Suci T-shirt industrial center. In addition, today's fashion trends, which following the Korean fashion, was making knitted products so desirable.

Table 1
The amount of worker in Industrial Knitted Binong Jati Center

Year(s)	Total of Industry (Industrial Unit)	Amount of Worker (People)
2012	293	2143
2013	140	1680
2014	120	1440

Source: Cooperative of Industrial Knitted Binong Jati (KIRBI)

Table 1 shows the number of business actors and workers who working in Binong Jati knitting industrial center, the data indicating a decrease in the number of business actors and workers absorbed from year to year. The decline in the number of craftsmen due to higher production cost condition and also the overwhelmed of imported knitwear products with cheaper price which become threat to Binong Jati knitting industrial center. The limited supplies of raw materials, rising of raw material prices, and inadequate production facilities and infrastructure have become obstacles in development of this small industry.

The decline trend of knitting business becomes a problem that immediately needs to be given the solution. This paper will be proposed how to increase the potential of Binong Jati knitting business by using SWOT analysis so that it will be obtained the right strategy to improve the competitiveness of this knitting industrial center.

2. Related Work

According Rangkuti (2013), SWOT (Strength, Weakness, Opportunities, Threat) is the identity of various factors which systematically to formulate strategies taken by the company. This analysis is based on logic that can maximize opportunities while simultaneously minimizing deficiencies and threats. SWOT analysis compares between external factors and internal factors. The most important activities in the SWOT analysis process are to understand all of the information in a case, analyzing the situation in order to find out what issues are going on, and decide what action should be taken to resolve the case.

Qualitative SWOT data can be developed quantitatively through calculation of SWOT Analysis developed by (A. & Jr., 1998) in order to be known certainly the position of organization on SWOT matrix. The calculation is done through three stages, namely:

1. Calculate score (a) and point weight (b) of factor and total number of score multiplication and weight ($c = a \times b$) on each S-W-O-T factors;
2. Reduce the total number of S with W (d) factor and O factor with T (e); the result of number ($d = x$) then becomes the value or point on the X axis, while the number ($e = y$) then becomes the value or point on the Y axis.
3. Look for the position of the organization shown by the point (x, y) in the SWOT quadrant.

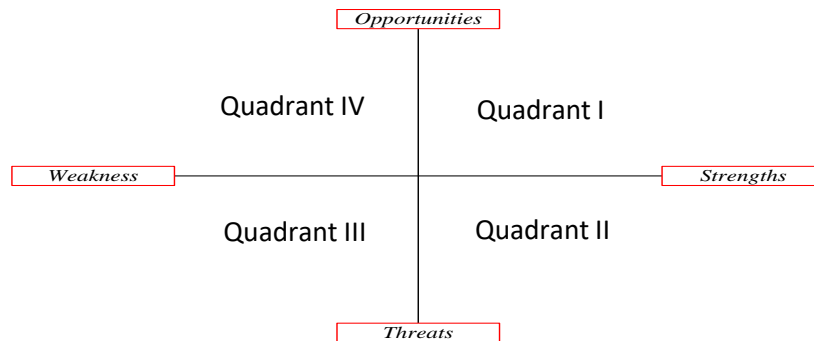


Figure 1 SWOT Matrix (Rangkuti, 2013)

SWOT analysis is a general method used to formulate corporate strategy formulation with the aid of application which connects SWOT analysis with resources based planning (Dyson, 2004).

Although the SWOT analysis can explain the factors briefly and generally, it cannot determine the importance of each factor that can be used for the assessment of alternative decisions related to those factors. So the SWOT analysis has deficiencies in measurement and evaluation, so it needs to be adjusted with Analytical Hierarchy Process (AHP) technique to overcome that deficiency (Yuksel & Dag, 2007).

3. Method

The conceptual model of the study, as shown in Figure 2, is begun with identifying internal factors and external factors which affecting the business persons in knitting industrial center. Data were collected by interviewing board of Cooperative of Binong Jati Knitting Industrial. While external factors obtained by looking at the real conditions of external factors supported by the results of previous research and confirmed toward the board of Cooperatives. Based on the results of data collection, it is done the calculation of weight and rate of each element on the strength, weakness, opportunities, and threats. The multiplication result of weight and rating determines the score of each SWOT category, which is then used to determine the quadrant position in the SWOT matrix. The position of the quadrant is used as a standard in determining the chosen strategies to improve the competitiveness of business persons of knitting industrial center.

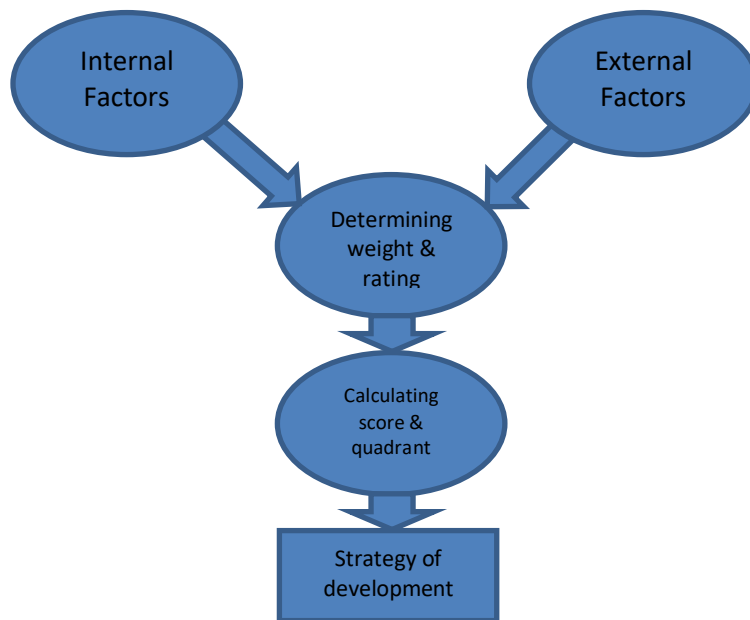


Figure 2. Conceptual Model

The following is an internal SWOT calculation based on the business person condition of the knitting center which shows the importance weight of each parameter component and the rate of performance value of each measured parameter.

To calculate weight and rating for each parameter are used Analytic Hierarchy Process (AHP) with implemented four step:

- (1) calculated the vectors of criteria weight

$$a_{jk} \cdot a_{kj} = 1 \dots\dots\dots (1)$$

$$\bar{a}_{jk} = \frac{a_{jk}}{\sum_{l=1}^m a_{lk}} \dots\dots\dots(2)$$

$$w_j = \frac{\sum_{i=1}^m \bar{a}_{ji}}{m} \dots\dots\dots(3)$$

(2) calculated the matrix of option scores

$$b_{ih}^{(j)} \cdot b_{hi}^{(j)} = 1 \dots\dots\dots(4)$$

$$S = [s^{(1)} \dots s^{(m)}] \dots\dots\dots(5)$$

(3) ranking the options

$$v = S \cdot w \dots\dots\dots(6)$$

V= total score, S: score matrix (rating), and W: weight vector

(4) Checking consistency

$$CI = \frac{x - m}{m - 1} \dots\dots\dots(7)$$

$$\frac{CI}{RI} < 0.1 \dots\dots\dots(8)$$

CI : consistency index
RI : random index

Based on processing data for five respondent from management of Cooperative Knitting generate the value of the CI/RI is 0.04, its can conclude that the process is consistent. Thus the result of AHP process calculated shown as bellow:

Table 2. Calculation of Strength and Weakness (Internal)

No.	Strength	Weight	Rating	Score
1	The strategic position of knitting center	0.10	4	0.40
2	The business was run hereditary	0.12	4	0.48
3	Become icon of Bandung City	0.12	4	0.48
4	facilities and infrastructure of business has been created (association, supplier, distributor)	0.10	3	0.30
Subtotal strength				1.66
No.	Weakness	Weight	Rating	Score
1	Lack of thread supply	0.12	4	0.48
2	Lack of Human Resources Skill	0.12	3	0.36
3	Out of date used machine	0.12	4	0.48
4	Tight of road access and dirty area (alleyway)	0.10	3	0.30
5	Low quality product	0,10	3	0,30
Subtotal weakness				1.92

Source: The Result of Data Processing, 2017

Note:

Total of strength and weakness factor weight = 100%

Rating score, scale 1 from lowest score to 5 highest score

1 = very low

4 = high

2 = low

5 = very high

3 = medium

Table 3 is an external SWOT calculation obtained from the multiplication of the weight of each parameter with the performance value of each parameter, the data obtained from the interviews with association board or existing institutional.

Table 3. Calculation of Opportunities and Threats (External)

No.	<i>Opportunities</i>	Weight	Rating	Score
1	Rise of potential demand of local and world market	0.20	4	0.80
2	Economical openness of AFTA and MEA	0.15	4	0.60
<i>Subtotal opportunities</i>				1.40
No.	<i>Threat</i>	Weight	Rating	Score
1	The existence of imported knitwear from China which cheap and has good quality	0.20	4	0.80
2	Raw material is still imported, so it is influenced by dollar exchange rate which inclined increase	0.15	4	0.60
3	There is no coordination between government in developing knitting center	0.15	3	0.45
4	There are a lot of competitor of clothing substitution product	0.15	4	0.60
<i>Subtotal threat</i>				2.45

Source: The Result of Data Processing, 2017

Note:

Total of opportunities and threat factor weight = 100%

Rating score, scale 1 from lowest score to 5 highest score

1 = very low

4 = high

2 = low

5 = very high

4. Result and Analysis

Result

The SWOT method is an analytical tool used to identify internal and external factors in order to formulate an appropriate development strategy for business actors in knitting center. This analysis is based on effort to maximize the power to seize the available opportunities, and to cover up the weaknesses and avoid the threats. Based on the weighting table and rating value performed above on internal and external factors, it was obtained the following scores: strength factor = 1.66; weakness factor = 1.92; opportunity factor = 1.40; threat factor = 2.45. From the calculation results of the scores, it is further plotted on the figure of SWOT analysis diagram consist with 4 quadrants as in the figure. From the intersection of the four lines of strength, weakness, opportunities and threat factors, then it is obtained the coordinates, that is:

Strength score - weakness score; scores of opportunities - threat scores
1.66 - 1.92; 1.40 - 2.45
-0.26; -1.05

Based on the result of SWOT quantitative calculation above, it can be formed a graph with coordinate point which shows the position of business performer in knitting center in SWOT quantitative analysis. The graph of the results of calculations of quantitative analysis with the SWOT method of all of entrepreneurs in knitting center is as follow:

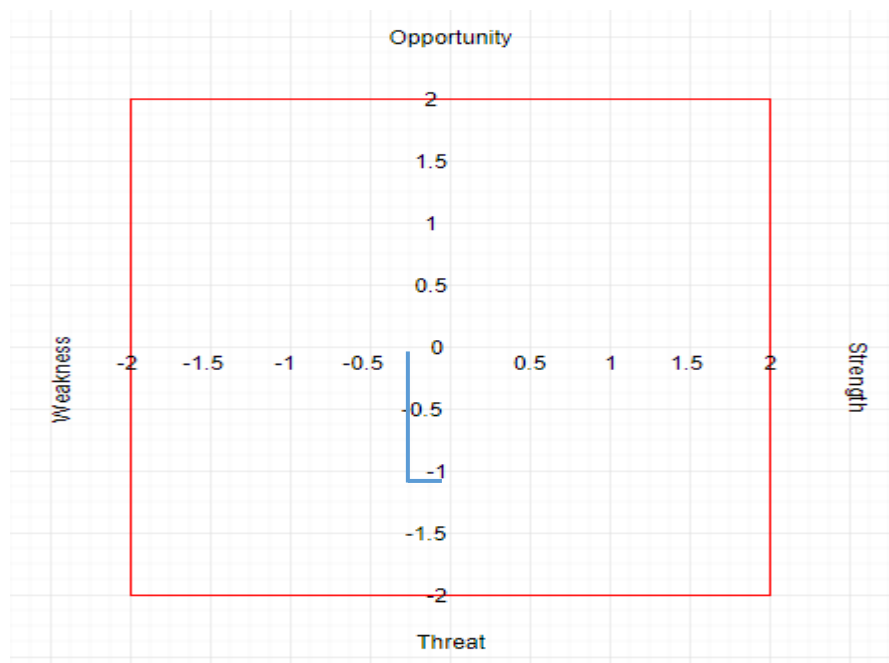


Figure 4 Matrix SWOT

Note:

- X = strength aspect of business actors in knitting center
- X = weakness aspect of business actors in knitting center
- Y = opportunities aspect of business actors in knitting center
- Y = threat aspect of business actors in knitting center

From the SWOT matrix graph above, it can be detected that the position of business person in knitting center in general is in quadrant 3 which is the lowest quadrant, that is WT (weakness-threat).

Validation

The validated model can be expected from the consistency value CI/RI. Thus the validation of it's condition, we can compare the swot analysis output with the real condition. As describe in the introduction of this paper that the data indicating a decrease in the number of business actors and workers absorbed from year to year. The decline in the number of craftsmen due to industry dominated by weakness and threat, it validate output of the SWOT matrix.

1. Weakness
 - a. The limited supplies of raw materials
 - b. Rising of raw material prices
 - c. Inadequate production facilities and infrastructure
2. Threat
 - a. Overwhelmed by imported knitwear products with cheaper price which become threat to Binong Jati knitting industrial center. It have become obstacles in development of this small industry.

Recommendation

This means that the necessary business development strategy is to cover the weakness and avoid the threat. Covering the weaknesses means by increasing the resources and capabilities so that weaknesses can be covered. Avoiding the threat is done in order to save business person in knitting center by involving various parties. The recommendation strategies to cover the weaknesses and avoid the threat with priority given to factors that have a high score are as follow:

1. Continuity in the supply of knitting raw materials, which consist of acrylic and spandex yarn, is done by breaking the chain supply of yarn as short as possible from the yarn factory so that the price of raw materials to the business person in knitting center is not too expensive. The committed strategies by involving the government through the relevant department to overcome these obstacles by:
 - a. Cooperating with yarn industry to supply specific stock of acrylic and spandex yarn for business actors in knitting center.
 - b. Initiate the existence of development partner programs from the yarn factory to business actors in knitting centers mutually and exclusively.
 - c. Coordinate and ensure the needs of raw materials of yarns in each period, e.g. weekly and sustainable through associations or cooperatives in the knitting center.
 - d. Establish a yarn distribution network as short as possible from the yarn factory so the price can be cheaper.
2. Knitting machine used for production is still manual and semi-automatic so the quality of knit which is produced is still relatively low. Thus, the business development strategy of knitting center is done by involving the alignment from the government through the related department, by:
 - a. Make a program plan review of replacement with automatic machine in phase.
 - b. Conducting data collection of condition and feasibility of machine of business actors in knitting center.
 - c. Determine the criteria of business actors who can participate in the automatic knitting machine replacement program.
 - d. Determine the financing scheme that suitable with the ability of the business actors.
 - e. Train workers to operate automatic machines.
3. Skills of human resources is still relatively low, both skill in knitting production and in business management. Improvement of human resource capability requires the involvement of government and universities such as College of Textile Technology. Strategy of human resource development is done by:
 - a. Plan a training program for production workers and business managers.
 - b. Collect the data of training that is needed and update the skill of knitting worker, such as operating the knitting machines correctly, operating the automatic knitting machines, and so on.
 - c. Provide skills training to create a creative and innovative design of knitwear.
 - d. Plan funding sources from skills training program of workers in knitting center.
 - e. Improve positive mental and motivation, both workers and knitting business owners.
4. Improving product quality is a way to compete with imported knit products from China and Korea. Quality improvement is done by:
 - a. Replacement of old (manual) knitting machine to automatic knitting machine.
 - b. Increase skill of the workers in producing the current knitwear product design.
 - c. Improve production methods and production quality control.
 - d. Make a well-known knit product brand.
5. Improving road access, that is currently narrow and slum, is done by involving relevant agencies such as department of spatial planning. Improving road access is done by:
 - a. Conduct a spatial restructuring plan in knitting center area and its access.
 - b. Review and improve existing urban planning.
 - c. Make road access for visitors and business partners.
6. By improving the quality of knits from various aspects as described above, it will prevent the business actors from threat of the widespread imported knit products, intense competition among business person, and the threat of increasing of clothing substitution product.
7. The need of coordination as support from various parties, especially between government, universities, and the yarn industry. This is done as follows:
 - a. Government support for the stability of raw material price by stabilizing Rupiah exchange rate against US dollar, price protection with tax incentives and other relief.

- b. Make coordination between government agencies in developing the knitting center business to avoid duplication of the program as it often happens today.
- c. The intervention of government and agency done by individual is proved ineffective in developing knitting centers.
- d. Create an integrated and sustainable business development assistance program plan.

5. Conclusion

The SWOT matrix position of the knitting industry is on the position of weakness-threat (WT) which means that the business person is currently in conditions which has internal weakness and face an external threat. So the strategy needed to be applied is the effort to immediately cover the weaknesses and avoid the various threats that exist. Weaknesses are covered by designing an efficient and effective yarn supply chain system. Then create a replacement program strategy from manual machine to automatic knitting machine to improve the quality of knitted products. It is needed to improve the skills of the workers, especially in using automatic machines and better production methods. Conducting the planning of facilities and infrastructure industrial centers, especially the ease of access to the location of industrial centers located in a densely populated area with narrowed road access. Furthermore, it is needed the coordinated and programed advisory strategies from various parties, especially the government, academia, yarn industry, and other parties so it can provide comprehensive solutions.

For further research, it is necessary to examine the capability of each business actors in accordance with group or business size clusters in small, medium, and large categories so that the offered solution is more representative and accordance with the problems and business scale on each cluster and also need a further study on external factors so that the problem can be mapped thoroughly.

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