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Abstract. As a result of the multidimensional crisis and global financial crisis, small medium enterprises (UKM) have become an alternative solution for economic and employment problems. The present research is focused on the development strategy for the tapis cloth industry in Bandar Lampung; the researcher analyzes the internal and external environmental factors considered to be the strengths, weaknesses, opportunities, and threats in the development of the tapis industry in Bandar Lampung, formulates a development strategy, and devises a set of priority-based alternative strategies. The methods used are the SWOT (Strength, Weakness, Opportunity, Threats) analysis and the AHP (Analytical Hierarchy Process). Research results show that the development requires additional capital, a location for the industry center, and standardized quality in all processing locations. Businesspeople involved in the industry must be encouraged to participate in trainings and seminars in order to build networks. They must also be thoroughly familiar with the application of management and promotional strategies that use leaflets, brochures, and other promotional media. Facilities in business locations and buildings must be improved, product quality must be standardized, and the market must be expanded.

Keywords: *development strategy, small industry, competitive advantage, SWOT-AHP*

INTRODUCTION

Strategy management is the art and science of formulating, implementing, and evaluating intersecting functional decisions to assist the organization in achieving its goals (Jelenc, 2009). Every organization implements an organizational development strategy as it has significant impact on the organization's performance (Singh, 2010).

When devising an organizational development strategy, the management must create added values by using new strategies or technologies to help ensure the organization's success in competitions (Gunby, 2009). In order to maintain competitive advantages, the organization must develop and maintain a knowledgeable and creative workforce (Afiouni, 2007). An organization should create a workforce that provides sustainable competitive advantages and produces added values by fostering an environment where human resources can continue to grow. Knowledge, motivation, and participation must be improved so that the organization can create competitive advantages that are difficult for competitors to imitate (Luftman and Kempaiah, 2007).

A theoretical approach in line with the development strategy that prioritizes human resources management in an organization is the Resources-Based View (RBV). According to the theory, competitive advantages can be created through the resources employed in a company (Barney, 1995). In strategy management literature, RBV can be used to obtain competitive advantages. The theory assumes that the desired managerial outcome is created from the sustainable competitive advantage (SCA) obtained through a superior performance. SCA is achieved through resources with the following characteristics: (i) adding value for customers; (ii) having barriers to duplication; and (iii) being appropriable (Hooley, 1999).

RBV suggests that companies develop and disseminate their resources in order to create SCA and exceed their competitors. Within the RBV frame, Mathur (1988) has developed the competitive positioning concept, suggesting a strategy differentiation classification based on non-price dimensions, namely merchandise and support. Competitive positioning decisions are part of the marketing strategy (Hooley, 1999); these decisions refer to methods to reach out to market segmentations and to achieve targets.

Faulker and Bowman (1995) identify eight essential strategy routes to arrive at these decisions: (1) no frills (2) low price (3) hybrid (low cost, low price, and differentiation) (4) differentiation (with and without price premium) (5) focused differentiation (6) increased price/standard value (7) increased price/low value, and (8) low value/ standard price. Routes 1-2 use price as a means of differentiating, routes 3-5 are identified as product and/or service differentiation strategies, and routes 6-8 are highlighted as failure strategies.

INTERNAL FACTORS		
	STRENGTHS (S)	WEAKNESSES (W)
EXTERNAL FACTORS — OPPORTUNITIES (O)	SO STRATEGY (Strength-Opportunity)	ST STRATEGY (Strength-Threat)
THREATS (T)	WO STRATEGY (Weakness-Opportunity)	WT STRATEGY (Weakness-Threat)

Figure 1. Strategy Matrix in SWOT Analysis
Source: Porter, 1980

The RBV theory's view of company resources is based on assumptions of their diversity and mobility (Mata, et al, 1995). The assumption of resources diversity is related to whether or not the company has resources or abilities also owned by competitors. In cases of similarities, the resources cannot provide competitive advantages. The assumption of resources immobility refers to resources that are difficult for competitors to obtain due to the exorbitant costs in developing, obtaining, or using them. Both assumptions can be used to determine whether an organization can create sustainable competitive advantages, by providing a framework that determines a process or technology's real advantages in market competition.

Research on resource-based companies shows that human resources management in an organization can contribute significantly to the maintainability of competitive advantages, through the creation of special knowledge, skills, and organizational cultures that other companies cannot imitate (Afiouni, 2007). In other words, by creating resources diversity (knowledge and skills improvement) and/or resources immobility (a culture where people are motivated to work), an organization can create and maintain sustainable competitive advantages.

In order to obtain competitive advantages, a company must devise a target strategy and make decisions (Jauch and Glueck, 1996). The important stages are: (1) ascertaining the company's missions and goals (2) examining threats and opportunities (3) examining its own strengths and weaknesses (4) considering alternative strategies (5) choosing strategies (6) implementing the strategies, and (7) evaluating the strategies. The company must also identify its strengths, weaknesses, opportunities, and challenges.

The SWOT analysis, in the context of strategy devising, evaluates internal strengths and weaknesses, external opportunities, and threats to the organization as the basis for establishing and developing policies (Hill and Westbrook, 1997). Figure 1 shows an alternative matrix for a SWOT analysis-based strategy: the SO, ST, WO, and WT

strategies (Porter, 1980). SO (Strength-Opportunity) is formulated by creating strategies where strength is used to take advantage of opportunities. ST (Strength-Threat) is formulated by creating strategies where strength is used to overcome threats. WO (Weakness-Opportunity) is formulated by creating strategies that minimalize weaknesses in order to create opportunities. WT (Weakness-Threat) is formulated by creating strategies that minimalize weaknesses in order to overcome threats.

In choosing an alternative strategy, a company can use the Analytical Hierarchy Process (AHP), a model that corresponds to the SWOT Analysis. The Analytical Hierarchy Process is an analytic tool for multi-criteria decisions; it uses quantitative and qualitative mathematical methods to analyze complex decisions (Saaty, 1980). The application of the AHP in the SWOT analytical method can assist decision makers in their selection of the alternatives and strategies provided by SWOT analysis results (Saaty, 1987). In order to improve performance through the SWOT analysis, the AHP method can be combined with the SWOT analysis (Stewart et al, 2002), resulting in a new hybrid method to weigh the goals to be achieved. This combination can also be applied to development of the tapis cloth industry in the city of Bandar Lampung.

The Tapis Traditional Woven Fabric (:tapis cloth) is one of Bandar Lampung's main products beside six other main commodities: ground coffee, salted fish, melinjo chips, banana crackers, embroidery, and clam products (Industry and Trade Service, Bandar Lampung, 2009). The tapis industry also has the highest production value among the registered manufacturers with company registration codes (TDI) in Bandar Lampung's Industry and Trade Service. Small industries, especially the tapis industry, play a vital role not only in economy and employment but also in culture, as the tapis cloth is one of Lampung's cultural characteristics. As a traditional cloth, it is worn during customary and religious ceremonies (weddings, traditional ceremonies, etc.) by the indigenous

people of Lampung. The Lampung Provincial Government has also issued a regional regulation to the effect that all top-tier officials are obliged to wear the tapis cloth during national red-letter days in order to preserve Lampung's cultural heritage. As a result, the tapis cloth becomes a local commodity that is constantly in demand, as both the indigenous people of Lampung and settlers are required to wear it. Collectors of traditional woven fabrics also come to Lampung to acquire the cloth. Thus, the tapis cloth must be in constant supply; its quality must be improved and patterns must be varied.

As a traditional cloth, the tapis cloth is the pride of the Lampung Province. Consequently, all shareholders must maintain and enhance its existence, in order to increase local competitiveness through the one village one product approach (Huseini 1998, Routray 2007, Hardjosukarto and Prihantika 2011). The tapis cloth industry is closely tied to small medium enterprises (UKM) as they affect both economy and employment in Lampung. The development strategy for traditional cloth is expected to contribute to the economy, expand employment opportunities, and preserve the national heritage; thus, the industry's existence can contribute greater positive influence on the locals. The present research aims to devise a development strategy for the tapis industry and a prioritized alternative strategy for the development of the tapis industry in Bandar Lampung, the capital of the Lampung Province.

RESEARCH METHODS

The research uses the post-positivist approach (Guba and Lincoln 1994, Denzin and Lincoln 1994, Neuman 1997, Crotty 1998, Neuman 2000, and Guba and Lincoln 2005). The research design used is the sequential mixed method, whose procedure is taken when the researcher needs to elaborate on or develop findings from one method using another method (Creswell, 2009). The research is descriptive in nature. The data is gathered through a literature study on the tapis industry development in Bandar Lampung, also through observation, interviews, and questionnaires. Interviews and questionnaires are conducted on personnels in charge of regional development: an official in charge of the PTPN VII partnership in the Lampung Province (an administrator of the tapis industry in Bandar Lampung), two officials from Bandar Lampung's Industry Service, an academician from a Lampung university who is studying industry development, and a businessperson involved in UKM, specifically the tapis industry.

Two data analysis techniques are used in this research: the SWOT Analysis and Analytical Hierarchy Process (AHP) (David, 2002). The SWOT analysis is used to obtain formulations of alternative strategies, the priorities of which are determined using the AHP analysis. Activity stages in the SWOT analysis consist of internal and external factors identification, questionnaire composition, selection of respondents, filling out of questionnaires, and data analysis.

Before conducting the SWOT analysis, the researcher determines the external and internal strategy factors through the External Factor Analysis Summary (EFAS) and Internal Factor Analysis Summary (IFAS). EFAS reviews the economy, social condition, culture, demography, environment, politics, laws, technology, and information in regard to the industry market competition involving the company. IFAS is a strategy formulation tool that concludes and evaluates the major strengths and weaknesses in a company's functional areas, as well as providing a basis for identifying and evaluating the relationships among the areas.

There are five stages in developing the EFAS matrix. First, identifying the external environmental strategic factors, including opportunities and threats. Second, determining the weight of the strategic factors on a scale of 0.0 (unimportant) to 1.0 (very important). The weight indicates the importance level of each factor in the industry or company's success. Third, rating each of the strategic factors on a scale of 4 (outstanding) to 1 (poor), based on the factor's influence on the company. The rating for the opportunity factor tends toward positive (bigger opportunites are rated 4+, small opportunities are rated +1). The reverse applies to the threat factor. Fourth, multiplying the weight with the rating to obtain the factor's weight value. The result is the weight value for each factor, on a scale of 4.0 (outstanding) to 1.0 (poor). Fifth, adding all the weight values on the column to obtain the company's total weight value. The total value shows the way the company reacts to its external strategic factors.

The IFAS matrix development also goes through five stages. First, identifying the internal environmental strategic factors, including strengths and weaknesses. Second, determining the weight of the strategic factors on a scale of 0.0 (unimportant) to 1.0 (very important) based on the factors' influence on the company's strategic position. The values may not exceed a total of 1.0. Third, rating each of the strategic factors on a scale of 4 (outstanding) to 1 (poor), based on the factor's influence on the company. Positive variables (all variables in the strength category) are rated from +1 to +4 (outstanding) by comparing them to the average value in the industry or that of the main competitors. The reverse applies to the negative variables. Fourth, multiplying the weight with the rating to obtain the factor's weight value. The result is the weight value for each factor, on a scale of 4.0

(outstanding) to 1.0 (poor). Fifth, adding all the weight values on the column to obtain the company's total weight value. The total value shows the way the company reacts to its internal strategic factors.

To learn the relative position of the enterprise in comparison with other enterprises that also produce the tapis cloth in Bandar Lampung, the researcher conducts an analysis using the CP Matrix (Competitive Profile Matrix). The weight, rating, and values both in the CP Matrix and the EFAS-IFAS matrices are calculated to obtain a similar purpose. The difference is that the strategic factors in the CP matrix are more extensive, do not cover specific and actual data, and are focused on a different internal output compared to the IFAS matrix. Strategic factors in the CP Matrix are not categorized into strengths and weaknesses as in the IFAS matrix. The ratings and values for other enterprises can be compared to the enterprise being researched. 1 is given when the enterprise is ineffectual compared to the other enterprises, 2 when it is a little ineffectual, 3 when it is a little stronger, and 4 when it is strongest.

Following the SWOT analysis is the prioritization of alternative strategies using the AHP. The first step is to arrange a hierarchy or determine a goal. The second step is to determine the priorities. Pairwise comparisons based on various criteria are made in the process, and there are two important stages: (i) determining which of the two is considered to be important/preferable/feasible and (ii) determining to what extent it is more important/preferable/feasible.

After the hierarchy is arranged, the next step is to include expert perceptions through comparisons among elements on one level by observing their influence on the levels above it. The results of the pairwise comparisons as seen through the expert perception are organized into pairwise or comparative matrices. Next, the eigen vector and eigen value are calculated along with the consistency, and this will determine the priority of choices.

The AHP model requires one perception in one comparison. Therefore, n perception must result in one perception that represents all expert perceptions. The general method used is to calculate the mean value using either of these two methods: (i) arithmetic means and (ii) geometric means. The geometric means is more suitable for a number sequence with a ratio and may reduce disturbance from a number that is too large or too small.

After the comparison matrix is filled out, priorities are determined using the eigen vector and eigen value. The local priority, or the priority in one level, is determined from the resulting eigen vector. Elemental priorities are multiplied with the numbers on the levels above them until the final level to obtain global priority.

The third step is to determine logical consistency. Consistency measurement in the AHP model goes through two stages. The first stage measures the consistency in each comparison matrix, and the second stage measures the consistency in the entire hierarchy. Each comparison is stated to be 100% consistent when it meets the following requirements:

$$A_{ij} \cdot a_{jk} = a_{ik} \tag{1}$$

Each value in the comparison matrix is basically a ratio because the value results from comparisons between two elements. The number 7 in a comparison matrix refers to a ratio of 7:1.

Based on the above explanations, it can be concluded that:

$A_{ij} = w_i/w_j$ ....$I_j = 1$ .... n

Therefore $a_{ij} \cdot a_{jk} = (w_i/w_j) \cdot (w_j/w_k) = w_i/w_k = a_{ik}$, and it can also be proven that:

$$a_{ji} = w_j/w_i = 1/(w_i/w_j) = 1/a_{ij}. \tag{2}$$

Consistency in a comparison matrix is measured using the following formula:

$$A \cdot W = l \max \cdot W \tag{3}$$

Consistency index (CI): $CI = \dfrac{\lambda mx - n}{n - 1}$ (4)

Consistency ratio (CR):

CR = CI/RI where: RI = Random Indices

(see Table 1) (5)

The next step is to multiply the second-level priority vector (a row vector) with the third-level consistency index vector (a column vector). The resulting number is then added to the second-level consistency index and the result is called M. Next the overall random index is calculated using the same method, with each consistency index replaced by a random index which depends on the matrix size. The result is an overall random index for the hierarchy symbolized as M'. Thus, the overall consistency ratio equals the overall consistency index (M) divided by the overall random index (M'), or, in brief:

$$CRH = M/M' \tag{6}$$

Where: M = second-level CI + (weight of second-level priority) (third-level CI)

M' = third-level RI + (weight of second-level priority) (third-level CI)

RI = Random Index

The hierarchy arrangement model is made in order to choose the best alternative development strategy. Every industry has its own specific key factors and indicators in its business development. The key factors in the hierarchy analysis model for the tapis cloth development strategy are research and development, market, human resources, access to available production factors, linkages, and business climates (Rosenfeld, 1997). Fourteen indicators are

Table 1 Value Table for Random Indices

N	1	2	3	4	5	6	7	8	9	10
RI	0	0	0.58	0.9	1.12	1.24	1.32	1.41	1.45	1.49

Source: Saaty, Thomas L. and Luis G. Vargas, 1994
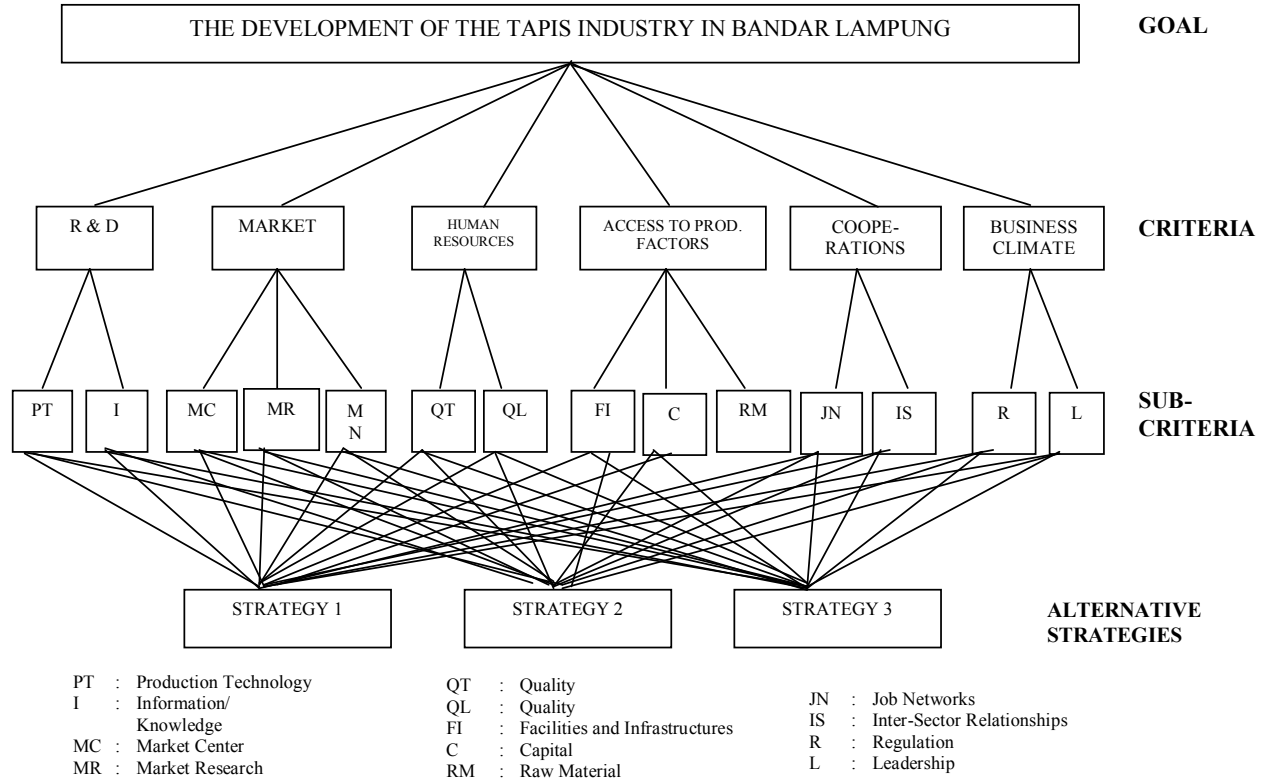
Figure 2. Analysis Model for Hierarchy Arrangement

PT	:	Production Technology	
I	:	Information/	
		Knowledge	
MC	:	Market Center	
MR	:	Market Research	

QT	:	Quality
QL	:	Quality
FI	:	Facilities and Infrastructures
C	:	Capital
RM	:	Raw Material

JN	:	Job Networks
IS	:	Inter-Sector Relationships
R	:	Regulation
L	:	Leadership

derived from these six key factors: production technology, information/knowledge, market center, market research, market network, quality, quantity, facilities and infrastructures, capital, raw material, inter-sectoral linkage, professional networks, regulation, and leadership. The hierarchy arrangement model used in formulating the best alternative development strategy is shown in Figure 2

RESULT AND DISCUSSION

Based on the data and information on internal and external factors, the factors can be described as follows: First, the internal factors that are also strengths include easy access to raw material, specialization for certain types of tapis cloth, product innovation through varied cloth patterns, adequate number of workforce, shared visions among the businesspeople, representative of the businesspeople on the regional level, and satisfactory cooperation among industry participants. Meanwhile, internal factors that are also weaknesses are the limited transfer of tapis cloth production skills to the locals, low-skilled human resources, difficulty in accessing capitals, lack of encouragement toward human resources develop-

ment from the management, inadequate business management, lack of technological application in the production process, lack of a marketing center, lack of enthusiasm from the businesspeople in knowledge development and network expansion, no product quality standardization, no promotional media such as leaflets and brochures, no product specification for specific market segmentations, and lack of supporting infrastructures.

Second, the external factors that are also opportunities are educational institutions that help reinforce entrepreneurship, business licenses for the tapis industry are easy to obtain, security is guaranteed, fair competition, high consumer interest, and ample support for product marketing. Meanwhile, external factors that are also threats are lack of support from research institutions for market development and product innovation, lack of access to product certification, the business association's small role in the tapis industry, and lack of assistance in the technology application for production and marketing.

Internal factors that count as strengths and weaknesses are then formulated using the IFAS weighing method, while external factors that count as opportunities and threats are formulated using the EFAS weighing method.

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Table 2. IFAS and EFAS Weighing Methods

Internal Strategy Factor Analysis System (IFAS)			
Internal Strategy Factors	WEIGHT	RA-TING	WEIGHT x RATING
Strengths			
• Easy access to raw material	0.09	2	0.18
• Specialization of tapis cloth products	0.08	2	0.16
• Innovation	0.07	3	0.21
• Adequate workforce	0.06	3	0.18
• Shared visions among businesspeople	0.05	2	0.10
• Representative of businesspeople on the regional level	0.06	2	0.12
• Cooperation among businesspeople	0.09	3	0.36
Total of Strengths (S)			1.21
Weaknesses			
• Skill transfers are limited	0.06	4	0.24
• Low skills among the workforce	0.04	3	0.12
• Lack of access to capital	0.06	3	0.18
• Lack of human resources development	0.05	3	0.15
• Inadequate business management	0.04	3	0.12
• Lack of technological application	0.05	2	0.10
• No marketing center	0.02	1	0.02
• Lack of enthusiasm from businesspeople in knowledge development and network expansion	0.05	2	0.10
• No product standardization	0.05	1	0.05
• No leaflets or brochures as promotional media	0.02	1	0.02
• No specification for certain segmentations	0.02	1	0.02
• Lack of facilities and infrastructures	0.04	3	0.12
Total of Weaknesses (W)			1.24
Total	1.0		2.45
External Strategy Factor Analysis System (EFAS)			
External Strategy Factors			
Opportunities			
• Educational institutions support entrepreneurships	0.15	3	0.45
• Licenses are easy to obtain	0.12	2	0.24
• Security is guaranteed	0.13	2	0.26
• Fair competition	0.12	3	0.36
• High consumer interest in the tapis cloth	0.14	2	0.28
• Promotions and marketing	0.11	3	0.33
Total of Opportunities (O)			1.92
Threats			
• Lack of support from research institutions for market development and product innovation	0.05	4	0.20
• Lack of certification for product quality	0.06	4	0.24
• Associations only play a small role	0.08	3	0.24
• No access to effective technology	0.04	4	0.16
Total of Threats (T)			0.84
Total	1.0		2.76

In Table 2, the IFAS matrix shows that factors such as access to raw material, specializations of certain cloth types, and cooperation among businesspeople in Bandar Lampung's tapis industry are the greatest strengths in developing the tapis industry, with a weight value of 0.09 for easy access to raw material. Cooperation among busi-nesspeople is strong in this industry (0.36), as is product innovation (0.21). The total score in the IFAS matrix is 2.45. We see in the IFAS analysis that the tapis industry in Bandar Lampung is sufficiently strong and worthy of further development. Naturally, the current weaknesses must also be reduced.

Table 3. Competitive Profile Matrix

Strategic Factors	Factor Weight	Tapis Industrial Region in Bandar Lampung		Industrial Region in Pringsewu	
		Rating	Weight	Rating	Weight
Regional infrastructures	0.10	3	0.30	2	0.20
Market share	0.40	3	1.20	3	1.20
Strong relationship with suppliers	0.15	2	0.30	3	0.45
Pricing	0.10	3	0.30	2	0.20
Product quality	0.25	3	0.75	3	0.75
TOTAL	1.00		2.85		2.80

The EFAS matrix in Table 2 shows that the highest weight value in external factors is given to entrepreneurship support (0.15). High consumer interest encourages the development of the tapis industry, with a score of 0.13. The total score in the EFAS matrix is 2.76. This indicates that external factors play a strong role in developing the tapis industry in Bandar Lampung.

The total score in the IFAS matrix is lower than that of the EFAS matrix. This means external factors are able to influence the internal environment in Bandar Lampung's tapis industry. Theoretically, it is more possible and easier to control internal conditions. Thus, the external environment needs to be conditioned in order to develop the tapis industry.

To develop the tapis industry in one region, it is necessary to analyze the relative position of the region in comparison with other regions that also have tapis industry centers. This analysis uses the CP Matrix (Competitive Profile Matrix). Factors in the strategic positions, or highly ranked factors, are assigned weights in accordance with their importance level. The weighing is done by expert sources, and other regions that also have tapis industry centers are given high scores as a comparison. Through this method, we can discover the tapis industry in Bandar Lampung's relative position in comparison with similar regions. The tapis industry in these regions must be as strong as the tapis industry in Bandar Lampung. According to the data and information gathered through surveys, one such region is the Pringsewu Regency, where the tapis industry grows as fast as the tapis industry in Bandar Lampung. Comparisons between the two regions are shown in Table 3.

Table 3 shows that tapis industry in Bandar Lampung is more competitive than in Pringsewu. The total score for the tapis industry center in Bandar Lampung is 2.85, while the total score for the tapis industry center in Pringsewu is only 2.80. Specifically speaking, Bandar Lampung's tapis industry is superior in its regional infrastructures and pricing, compared to the pricing in Pringsewu's tapis industry. However, the relationship with suppliers is weaker in Bandar Lampung due to the higher number of suppliers. Other strategic factor values for both regions are scored on a similar level.

After the analysis and weighing of internal and external factors, the researcher formulates alternative SO, WO, ST, and WT strategies. They are devised based on S and W internal factors and O and T external factors, and incorporated into the IFAS-EFAS SWOT interaction matrix. At this stage, the purpose of weighing is to determine the priority scale for the alternative strategies. First, the alternative strategies formulated from the strength-opportunity (SO) factor make use of the industry's strength by using available opportunities. Second, the alternative strategies developed from the strength-threat (ST) formulation make use of the industry's strength to suppress threats to the tapis industry in Bandar Lampung. Third, the alternative strategies developed using the weakness-opportunity (WO) formulation eliminate weaknesses in order to gain available opportunities. Fourth, the alternative strategies developed using the weakness-threat (WT) formulation eliminate weaknesses in order to avoid threats to the tapis industry in Bandar Lampung.

From the sequence of alternative strategies formulated from the IFAS-EFAS combination in Figure 3, we see that the highest weight value is in the alternative strategies with the Weakness-Opportunity (WO) formulation (3.16). The strategy is to minimize weaknesses in Bandar Lampung's tapis industry in order to gain opportunities. The industry must strive to minimize all weaknesses; in other words, it is the businesspeople who must overcome the weaknesses, such as lack of skill transfer to the locals, low-skilled human resources, lack of access to capital, a less than functional management structure, a less than professional business management, lack of effective technology application, lack of a marketing center, ineffectual networks, low product quality, lack of promotional media, lack of specializations for certain types of tapis cloth, and lack of infrastructures. These are the serious obstacles that businesspeople in this industry must overcome.

The weakness-opportunity (WO) strategy provides the following solutions for the problems faced by busi-

IFAS / EFAS	Strengths (S):	Weaknesses (W):
IFAS / **EFAS**	1. Sufficient raw material 2. Specialization for product variation 3. Innovation 4. Adequate workforce 5. Shared vision among businesspeople 6. A leader that represents businesspeople on the regional level 7. Good cooperation and relationship among businesspeople **(WEIGHT = 1.21)**	1. Skill education system is static 2. Low professional knowledge and skills 3. Lack of capital for regional development 4. Industrial structure and management do not encourage human resources development 5. Less than professional business management 6. Inadequate product equipments for the production process 7. No market center 8. The businesspeople's lack of enthusiasm in expanding knowledge and networks 9. Non-standardized quality for products and cloth patterns 10. No leaflets, brochures, or other promotional media made by UKM businesspeople 11. No specification for product quality 12. Lack of facilities and infrastructures **(WEIGHT = 1.24)**
Opportunities (O): 1. Support from educational and training institutions in improving entrepreneurship skills; 2. Business licenses from the government administration are easy to obtain; 3. Regional security is guaranteed; 4. A fair competitive climate that accelerates product quality improvement; 5. High consumer interest in the tapis cloth; 6. Support for product promotion and marketing **(WEIGHT = 1.92)**	1. Building and improving networks from upstream to downstream, from material suppliers to marketers of finished products; 2. Constant product innovation, especially the cloth patterns and types, these being the competitive advantages in Bandar Lampung's tapis cloth against other products, especially well-known products **SO = 3.13**	1. Standardization of production process 2. Assistance in capital provision and building a regional center; 3. Motivating businesspeople to participate in training, seminars, and network-building, and improving their understanding of good management in UKM; 4. Cooperations in order to promote Lampung's tapis cloth 5. Product quality specification in order to expand the market; 6. Building a marketing center for Lampung's tapis cloth **WO = 3.16**
Threats (T): 1. Lack of support from research and development institutions in market research and product innovation; 2. Lack of support in product certification 3. Business associations only play a small role in business development 4. No effective technology available for UKM businesspeople **(WEIGHT = 0.84)**	1. Increasing the role of associations through shared visions and cooperation commitments among businesspeople 2. Further cooperation with research and development institutions to create new patterns, production tools, and varied products with affordable prices **ST = 2.05**	1. Providing effective and affordable technology in order to improve production techniques; 2. Providing product certification in order to meet product standard qualifications and expand the market **WT = 2.08**

Figure 3. The IFAS-EFAS SWOT Interaction Matrix

nesspeople in Bandar Lampung's tapis industry: (1) Standardization of production process (2) Assistance in capital provision and building a regional industry center (3) Motivating businesspeople to participate in training, seminars, and network-building, and improving their understanding of good management in UKM (4) Cooperations in order to promote Lampung's tapis cloth (5) Product quality specification in order to expand the market, and (6) Building a marketing center for Lampung's tapis cloth.

As it may not be possible to carry out these WO strate-gies simultaneously, there needs to be a priority scale in case of limited resources in their simultaneous imple-mentation. The priorities for WO strategies formulated through the SWOT analysis are determined using the Analytical Hierarchy Process (AHP).

Unal and Guner (2009) conducted a research using AHP tools in "Selection of ERP Suppliers Using AHP Tools in the Clothing Industry." At the moment, according to the research, companies face an ever-increasing competition, an expanding market, and higher consumer expectations.

Table 4. Criteria and Parameters for Determining Prioritized Strategies

CRITERIA	SUB-CRITERIA	INDICATORS
A. **Research and Development (R and D)**	Production technology (hardware)	Types of new technology/ commodity; Research institution; Applied technology service
	Information/knowledge (software)	
B. **Market**	New market center/market location (hardware)	
	Software: Market research Market network (access to information on market and production factors)	
C. **Human Resources**	Quality	Facilitation programs; Experts
	Quantity	Types and number of education, training, courses; Number of supporting workforce
D. **Access to Available Production Factors**	Facilities and Infrastructures	Physical infrastructures, service providers; Information dissemination and service; Sustainability/Continuity
	Capital	Capital source; Types of business (ventures, micro, etc.); Information dissemination and capital provision service; Sustainability/ Continuity
	Raw material	Type of material; Material providers; Information dissemination and service from providers; Sustainability/ Continuity
E. **Linkages**	Partnership and Cooperation (Network)	Forum (trust among businesspeople; commitment)
	Inter-sectoral linkage/commodity	Input-Output (Input/output source; Input/ output type; Access to input/output)
F. **Business Climate**	Regulation	Mechanism; Regulation/law/ policies on the regional, national, international levels in all sectors; Security
	Leadership	Regional leadership, businesspeople/market leaders

Cloth manufacturers in particular must adapt quickly to the consumers' ever-changing needs. In a constantly changing market, the cloth industry must be able to produce various types of products in smaller quantities and shorter periods. In order to stay ahead of the competition, more clothing companies are adopting the enterprise resource planning (ERP) system.

Choosing the appropriate ERP system helps guarantee the success of an ERP project. The AHP method used in selecting ERP suppliers is based on criteria established by the company manager and experts. In the three companies reviewed for this research, three of the best alternatives for ERP suppliers are selected using the AHP method. Company A has the best strategy compared to the other two companies. The strategy selection is based on nine criteria (Unal and Guner, 2009): (1) functionality; (2) implementation approach; (3) support; (4) costs; (5) organizational credibility; (6) experience; (7) flexibility; (8) customer focused; and (9) future strategy. Three of these - functionality, flexibility, and support - play the biggest roles in all the alternatives.

During the data analysis, "cost" is separated from the calculation for fair evaluation purposes. By nature, "cost" is the most important criterion that influences the result after the best alternative is chosen. To add this criterion to the total calculation, first we normalize the price by dividing the total price with each price. Then we conduct the cost-benefit analysis by dividing the synthesized value with the normalization cost. It is through this calculation method that company A is chosen as the best supplier.

The research on the development strategy for the tapis industry in Bandar Lampung uses the AHP method and results in alternative development strategies. After verifying the data from interviews and questionnaires, the researcher lists in Table 4 the criteria for determining priorities in development strategies, namely six main
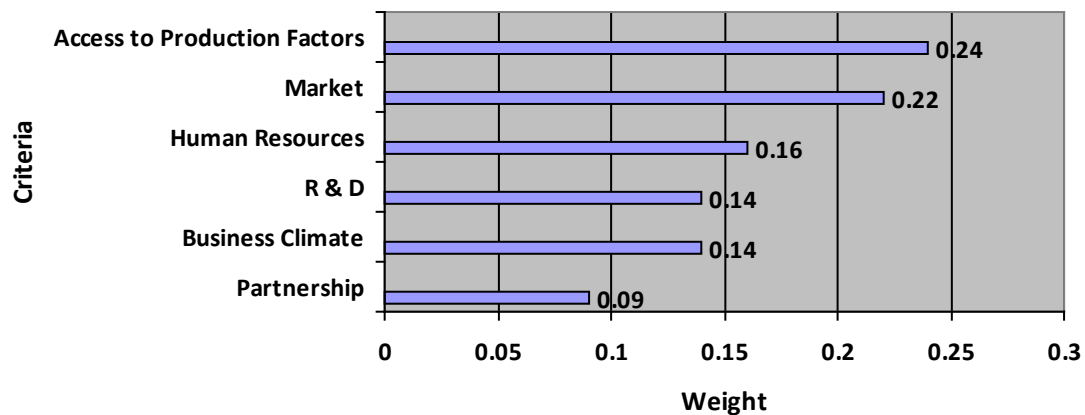
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Figure 4. Weights of the Criteria that Determine Priotitized Strategies

criteria and fourteen sub-criteria. The verification results in the following sub-criteria: production technology, information/knowledge, market center/market location, market research, market network, human resources quality, human resources quantity, facilities and infrastructures, capital, raw material, partnership and cooperation, inter-sectoral linkage/commodities, regulation, and leadership.

The approach used in the hierarchy arrangement is the bottom up approach: the factors are identified according to their positions, from the lowest (level 3) to the highest (level 0). Alternatives for development strategies in level 3 are the result of the SWOT analysis, namely the Weakness-Opportunity (SO) strategy which consists of six alternative solutions. Level 2 consists of sub-criteria with more detailed explanations on the aspects that determine regional expansion based on the main criteria. The sub-criteria in Table 4 identify the factors on Level 2. Level 1 consists of the main criteria in regional expansion, of which there are six: (1) Human resources development (2) Further research and development (3) Market expansion (4) Linkages (interrelations, cooperation, and partnership), and (6) Business climate. The factors that determine the prioritized strategies for developing the tapis industry in Bandar Lampung, in line with the purpose of this study, are placed highest in the hierarchy (Level 0). These factors are the focus among all the factors considered in determining the prioritized development strategies.

The weight values show the priority scale in the main criteria in the development of Bandar Lampung's tapis industry. The weight equals the calculation result in each stage, and the weight ranking shows the priority ranking. The higher the priority, the greater the weight, as shown in Figure 4. Ranked from the highest to the lowest, the priorities are: access to production factors, market, human resources, research and development, business climate, and partnership.

In Level 1, as shown in Figure 4, access to production factors ranks highest in its importance in determining the prioritized development strategies in Bandar Lampung's tapis industry. It has the highest weight value (0.24), followed by market expansion (0.22) and human resources development (0.16). The reason is that access to production factors has the widest impact on and is a basic aspect in the development of Bandar Lampung's tapis industry. Access to production factors includes access to facilities and infrastructures development (physical infrastructures, service providers, service/facilities in the region), capital resources (capital providers, types of capital, service/ease in acquiring capital), and raw material (suppliers, types of material). The global ratio consistency in the criteria that determine regional expansion is 0.09. This means, in general, respondents give fairly consistent responses to each criterion, and thus they have chosen access to production factors as the main criterion in determining prioritized strategies in regional development.

The present research shows different results compared to that of Unal and Guner (2009). In the first stage, Unal and Guner determine the evaluation criteria in selecting ERP suppliers and setting up a hierarchy. The latter is based on the following: (1) functionality; (2) implementation approach; (3) support; (4) costs; (5) organizational credibility; (6) experience; (7) flexibility; (8) customer focused; and (9) future strategy. In order to maintain objectivity in data analysis, "cost" as a criterion is calculated separately.

In Level 2, as shown in Figure 5, the weight values show the priority rank of each sub-criterion. Ranked from the highest to the lowest, the priorities are: market center, human resources quality, raw material, production technique, capital, inter-sectoral linkage, regulation, leadership, infrastructures, market network, market research, information, human resources quantity, and professional networks.
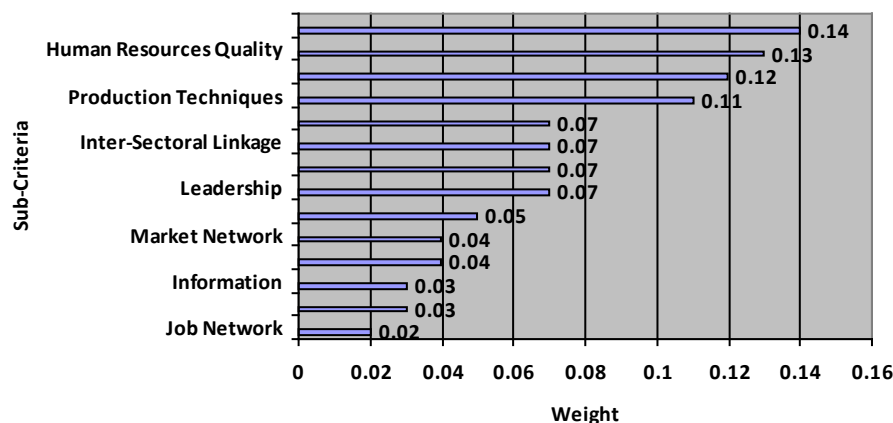
Figure 5. Weights of the Sub-Criteria that Determine Prioritized Development Strategies

According to its importance level in the research and development to support regional expansion, production technique has the highest weight value (0.75), followed by information/knowledge (0.25). Viewed from the research and development perspective, the fact that production technique has the highest value indicates that the development of effective techology to improve processing or production technique will result in products with standardized quality.

According to its importance level in the market as a regional expansion support, market center has the highest weight value (0.63), followed by market network (0.19) and market research (0.17). The fact that market center development has the highest value shows that market center is a vital aspect in the development of Bandar Lampung's tapis industry. This is because all small medium enterprises in the region can gather in the same location, namely the market center, leading to more convenient shopping for buyers.

According to its importance level in human resources as a regional expansion support, human resources quality has the highest weight value (0.8), followed by human resources quantity (0.2). Improvement in human resources quality can influence the small medium enterprises' productivity and performance, especially in regard to the tapis industry, both in the managerial and operational aspects. The improvement may not only affect the availability of educational and training programs and facilitating institutions, but may also provoke small medium enterprise owners out of their apathy and incite their enthusiasm in participating in the available educational and training programs. In turn, high-quality human resources will help improve the tapis industry in Bandar Lampung.

According to its importance level in access to production factors as a regional expansion support, raw material has the highest weight value (0.49), followed by capital (0.31) and infrastructures (0.20). The fact that raw material

has the highest value shows that raw material availability - including affordable prices, reliable suppliers, and good service - plays a vital role in the production process. Therefore, small medium enterprise owners must have a good relationship with suppliers so the former can have a strong bargaining position. The reason is that suppliers have absolute control over the availability of raw material, which is obligatory in a sustainable business.

According to its importance level in partnership as an industrial development support, inter-sectoral linkage has the highest weight value (0.75), followed by professional networks (0.25). The fact that inter-sectoral linkage has the highest value shows that it is crucial in regional expansion. The linkage covers not only guaranteed availability of material (based on its sources and types, as well as easy acquirement and production of material), but also product types, quality, and quantity, as well as access to product marketing. Guaranteed availability of material suppliers alone does not significantly affect industrial development. In product promotion and use, business agents also need to secure support from other sectors, such as the government, private sector, and general public.

In relation to its importance level in business climate as an industrial development support, regulation greatly influences regional expansion. Regulation improvement covers policies directed toward reducing obstacles in business, such as fiscal policies, incentives, and other regulations; enforcement of laws and regulations; good leadership on the government and regional levels; and market leaders. Therefore, the two sub-criteria have similar weights or roles in determining prioritized strategies in regional development (0.5).

Finally, according to its importance level in the purpose of determining prioritized development strategies (level 0), market center development has the highest weight value (0.14). Other criteria with fairly high weight values (over 0.1) are human resources quality, raw material, and production technique. The global ratio consistency

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in criteria that determine industrial development is 0.05. This means, in general, respondents give fairly consistent responses to each criterion, and thus they have chosen market center as the main criterion in determining prioritized strategies for business development.

On this level, as in the weighing of the main criteria, weight values indicate the priority rank of each sub-criterion. The ranking is as follows: market center ranks highest in priority with the highest weight value, followed by human resources quality, raw material, production technique, capital, inter-sectoral linkage, regulation, leadership, infrastructures, market network, market research, information, human resources quantity, and lastly professional networks. Since the criteria in level 2 (the sub-criteria) are most influential in determining the weight of alternative strategies, the discussion on the weighing of alternative strategies takes place on that level.

The analysis on level 2 provides an objective overview of the selected alternative strategies. This differs from Unal and Guner's (2009) data analysis, which undergoes five stages in order to arrive at the chosen alternative strategies. In the second stage, Unal and Guner establish the factors from a set of pairwise comparison matrices, using the 8x8 size and the relative scale measurement. The pairwise comparison is done on elements that dominate other elements. A n(n-1) 56 consideration is required to develop the matrix set in step 2. In the third stage, Unal and Guner calculate the eigen value in the comparison matrix and eigen vector by normalizing the computation procedure. To arrive at the eigen vector, they calculate the mean value in each row. Matrix A multiplied with the eigen vector equals the local priority vector. After the eigen value in each criterion is divided, the resulting mean value equals the highest eigen value in the matrix. Next, in the fourth stage, is a consistency test. The result shows a consistency index (CI) of 0.0943 and a consistency ratio (CR) of 0.0669. The values are acceptable since CR is required to be ≤ 0.1. The last step is to determine the chosen prioritized strategy. According to value priorities, company A receives a score of 0.441575104, company B 0.0302204781, and company C 0.256220204. Therefore the prioritized strategies are those of company A - namely functionality, flexibility, and support - as they play the biggest roles among all the alternatives.

In the development strategy for the tapis industry, the first priority, according to the global weight shown in Figure 6, is assistance in capital provision and building an industry center (S.2), with a weight value of 0.224. The next priority is improvement in the production process standardization (S.1 - 0.208), then motivating business-people to participate in training, seminars, and network-building, and improving their understanding of good

management in UKM (S.3 - 0.204). Next is cooperation in order to promote Lampung's tapis cloth (S.4) with a weight value of 0.145, followed by building a marketing center for the tapis cloth (S.6 - 0.137), and finally product quality specification in order to expand the market (S.5 - 0.081).

The S2 strategy is chosen based on the following criteria: market center, market research, facilities and infrastructures, and inter-sectoral linkages. The S.1 strategy has the highest weight values in production technique, human resources quantity, capital, and raw material. Meanwhile, information/knowledge, market network, human resources quality, professional networks, and leadership have the highest weight values in S.3, and the S.4 strategy has the highest weight value only in the regulation criterion. From the industrial development perspective, strategies S.5 and S.6 are not very dominant in the development of Bandar Lampung's tapis industry.

Priority-based strategy devising in the AHP method is intended as a reference, in case all the strategies cannot be implemented simultaneously due to various limitations, such as limited finances and time. However, simultaneous implementation of these strategies in the development of Bandar Lampung's tapis industry will lead to maximum results.

These strategies tend to benefit the government, who has an interest in developing the industry in order to increase national competitiveness. Therefore, in the next stage, the conditioning of the business climate must be directed toward increasing natural industrial competitiveness, and other industries must also gain competitive advantages without government intervention. For instance, the conditioning can be targeted toward progress in entrepreneurship. Therefore, the industry will grow due to the strength of small enterprise owners. This is feasible considering that the market for the tapis cloth is experiencing a favorable growth, and the cloth can be nurtured into a priority commodity in both national and international markets.

CONCLUSION

According to the SWOT analysis, the strategy required to expand the tapis industry in Bandar Lampung should minimize weaknesses and take advantage of the available opportunities. The alternative strategies formulated in the SWOT analysis are then ranked in accordance with their priority using the AHP method, and grouped into criteria and sub-criteria that determine the prioritized strategies in business development. On level 1 (main criteria), access to production factor has the greatest weight in determining the prioritized alternative strategies in business development. On the most operational level, which is also
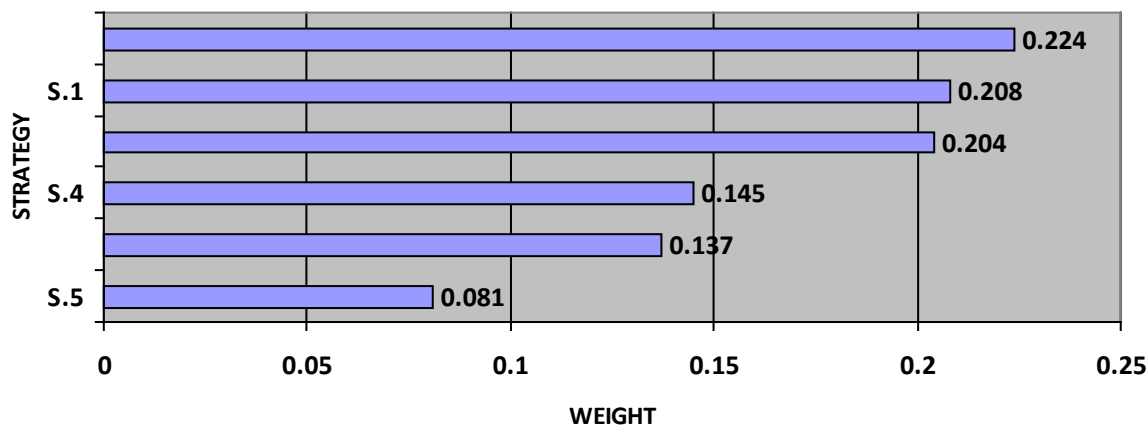
Figure 6. Global Weight of Alternative Strategies

the major influence on the prioritized alternative strategies in business development (level 2), the greatest global weights (over 0.10) are assigned to production technique, inter-sectoral linkage, market center, raw material, capital, information/knowledge, professional networks, facilities and infrastructures, market network, and market research.

Below is the priority ranking for the alternative strategies in the tapis industry development in Bandar Lampung: (1) Providing capital and building a business center (2) Improving product manufacturing in order to acquire good quality standards (3) Motivating businesspeople to participate in training, seminars, and network-building, and improving their understanding of good management in UKM (4) Distributing leaflets, brochures, and other promotional media in cooperation with the government, also with the tourism and hotel service, to promote the tapis cloth (5) Upgrading facilities or infrastructures in the region, including business locations and buildings and shophouses (5) Product quality specification in order to expand the market.

To implement these prioritized alternative strategies in industrial development, administrators and businesspeople can build a market center in order to gather all small medium enterprises in one integrated point or center. The use of facilities and infrastructures can also be maximized; consequently, more people will have access to the tapis industry center.

In regard to future academic contribution, similar researches may be conducted with special attention given to the experts involved. When the experts come from a bureaucratic background, their competence and expertise must be carefully considered in order to avoid bureaucratic intervention. Furthermore, to facilitate a more intensive discussion among expert respondents, opinions gathered through questionnaires should be assessed in an open and direct manner. When respondents fail to reach an agreement, the opinions in the AHP can be combined using geometric equalization.

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