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Strategies for Developing Sustainable and Competitive Cluster For Handycrafts –Based Small Medium Enterprise (SME)

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ABSTRACT

The SME Assist concept was formulated in August 2009 in line with the philosophy of university-industry engagement. Small Medium Enterprises (SMEs) are important economic driving force in many countries. Previous researches show that efforts taken by various parties and governments of different countries have helped improve and transform SMEs to be competitive in the fast changing global economy. In Indonesia specifically in Bogor regency, West Java, there are different models or approaches adopted and implemented by various parties. However, competitiveness of SME remains an area of concern. For Handycrafts-based SME, in order to meet these expectations and fulfil their contributions to the development process, it is absolutely important that they have high productivity. It is essential that these industries provide productive and remunerative employment and, for their survival and growth, offer products and services at competitive quality and price. The Handycrafts-based SME has a potential to develop in Bogor Regency which is located in tourism area and divided into Villages (Cilember, Leuwimalang, Cisarua, Cibeireum, Kopo and Jogjogan) in Cisarua District.

Handycrafts is the dominant cluster that can generate earning sources and give role of economics which is very significant. Unfortunately, the existence of the Handycrafts-based SME is not as good as most people expected, because there are many constraints faced. In the mean time, the infrastructure and access information concerning capital, technology, management and marketing are limited. Therefore, it is essential to formulate strategy to develop handycrafts-based SME based on internal and external factors. The objectives of this research are to identify the characteristics of handycrafts-based SME in Bogor Regency to have actual conditions, and to analyze the SME's internal-external environment and to select the alternative strategies for development .

The development strategies of handycrafts-based SME are proposed according to external and internal factors. These factors influence and determine the development dynamic and growth of handycrafts-based SME. The combination of strength and weaknesses together with external situation will determine the development posibility of SME. The score analysis method was used to analyze the internal external environment used for generating strategy using analytical Hierarchy Process (AHP) method. Hierarcy decisions was based on interpretation of secondary data concerning external and internal factors which influence the growth of SME and early discussion with experts from the SME entrepeneurs, academics,

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and local government. The prioritation of alternatives strategy was determined synchronization of literature and opinion of expert responder, then the result was processed with AHP.

The results of this research show that the characteristics of handycrafts-based SME in Bogor Regency are: using traditional management, simple record-keeping administration, having local market and regional sale, utilize local or regional raw material, perform continous production system, having good quality awareness, using self or family capital resource, utilize simple equipments and technology and also having good innovation capability. According to the score assessment of AHP, the main strategy for the development of handycrafts-based SME in Bogor Regency is give more or better attention for policy formulation and based on socialpreneurship. This strategy means that the government policy should enhance or at least not constraining the development of handycrafts-based SME. The policy should also accommodate the necessity of all stakeholders related to handycrafts-based SME

Key word: Handycrafts Cluster, Competitiveness, Strategy, SME

1 Introduction

Indonesia has promising tourism potential which most of area is dominated by thousand islands also watery/ oceanic area around 7.9 million km2, plus very wide shore line of 80.791 km2. World tourism sector is increasing significantly while in Indonesia, the utilization of potential human and natural resources is still not optimal. Therefore, tourism prospect in Indonesia is very promising which followed by other potential industries such as food, beverages and handycrafts . Indonesia's economy has experienced a crisis in 1998, when the economy is completely destroyed. In 2008 there was a crisis in the world, especially Americans who experienced a significant impact from the crisis, but in 2008 that Indonesia is not affected by the crisis because the domestic economy has been saved by Micro, Small and Medium Enterprises (SMEs) in Indonesia. In 1998, SMEs proved to also be saved from the crisis during which many large companies out of business. SMEs can be regarded as one of the saviors of the Indonesian economy because it can absorb many workers who was exposed to unemployment or Termination (PHK). In addition, SMEs are able to survive in the midst of financial crisis shocks that catapulted the price of household goods at that time (1998). Millions of Indonesian SMEs are now even able to contribute up to 56% of Gross Domestic Product (GDP). From the data gathered from the years 1998- 2012 BPS chart the growth of SMEs is always rising from year to year, this time only Indonesian SMEs amounted to 56.5 million units , Ministry of Cooperatives and Small and Medium Enterprises in charge of SMEs activities in Indonesia. SMEs present as one way out for Indonesia to emerge from periods of economic crisis. In addition, SMEs grow on the basis of the domestic economy, while the growth of Indonesian economy was largely driven by the domestic economy. Moreover it can be seen by the influence of SMEs in Indonesia, whose number is still growing. SMEs clearly play a vital role in economic growth in Indonesia.



Year	Micro	Small	Medium	Large	Total
2010	8.616.294	106.591	7.409	1.536	8.731.830
2011	8.626.671	116.062	8.181	1.728	8.752.642
2012	9.042.519	115.749	8.235	1.853	9.168.356



Year	Micro	Small	Medium	Large	Total
2010	12.964.464	547.765	454.082	2.121.539	16.087.850
2011	13.172.794	607.236	498.372	2.270.763	16.549.165
2012	13.861.814	623.556	522.325	2.374.805	17.382.500



Year	Micro and SME	Large Enterprises
2010	53,75%	46,25%
2011	54,20%	45,80%
2012	54,55%	45,45%

Figure 1 Contribution to GDP based on population of bussiness unit and number of employability in West Java, Indonesia. Source: Indonesian Statistics (BPS, 2013)

According to figure 1 it can be seen that the role of Small and medium entreprises in Indonesia specifically in west java become very important to the Gross Domestic Product (GDP). Bogor regency, is a regency of West Java, Indonesia. It is considered a bedroom community for Jakarta, and currently home to over 5 million people.It is bordered by Tangerang Regency, the cities of South Tangerang, Depok and Bekasi, and finally Bekasi Regency. The area has witnessed significant population growth. The Indonesian government has announced that it intends to divide the existing Bogor Regency by splitting off the western districts to form a new West Bogor Regency. In the residual area of the Regency, the 2010 census counted 4,770,744 people, of which 2,450,426 are male. The latest official estimate (for January 2014) is 5,131,798 people. Bogor regency has a great potential for creative economy industry specifically in handycrafts-based SME's cluster. which contributes to national production. The production contribution in 2008 until 2014 Bogor regency, west Java export volume of dolls, bolster, curtain kids toys, handmade-bag, shoes and other handycrafts to all over indonesia tourism area i.e Kalimantan, Sumatera even singapore and Malaysia. Cisarua district is one part of Bogor regency whereas it is consist of six villages there are cilember, cisarua, jogjogan, kopo cibeureum and leuwimalang. Every villages has potential handycraft .Cisarua district is becoming phenomena in tourism industry also a success cluster model of handycraft with sustainable yield. The effect of importance role of Cisarua District development is show by the number of small medium enterprises related to creative industry such as handycraft , cullinary and traditional art.. Many of thehandycrafts-based SME's cluster are newly established within the tourism cluster and it still grows. This is interesting fact that cisarua district is opening new opportunities for Indonesian handycrafts export. This paper will explore Cisarua District experience in developing handycrafts as a lesson learns to develop a sustainable and competitive cluster in handycrafts-based SME's cluster. This paper moves beyond this impasse by focusing on the identifying and formulating strategy to develop cluster most likely to have strong factors forces operate a within a cluster.

2 Objective

The research objectives are:

1. To identify the characteristics of handycrafts-based SME in Bogor Regency
2. To formulate strategy from internal and external environment factors.
3. To set priority on strategy to develop sustainable and competitive handycrafts-based SME cluster.

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3 Literature Review

The Global Competitiveness Report of the World Economic Forum defines competitiveness as "the set of institutions, policies, and factors that determine the level of productivity of a country". Competitiveness can be divided into various levels. National competitiveness refers to the ability of a country to market the products produced relative to the ability of the country's other states. The competitiveness of the regions has the same meaning as the national competitiveness, but on a regional scale. An area that can compete with other regions in the manufacturing and marketing of goods and services referred to high competitiveness. There is also the competitiveness of enterprises, namely the ability of a company to produce a product that consumers demand relative to other companies. The difference between the three competitiveness are national competitiveness is determined by the competitiveness in these areas in the country, regional competitiveness is determined by the competitiveness of existing companies in the area, while the company's competitiveness is determined by the level of productivity of the company.

There are two reasons why it's important to have regional competitiveness. First, to realize that a company's competitive advantage is not entirely dependent on the internal respectively. Secondly, there are two types of competitive advantage that should be recognized, namely the competitive advantage of static and dynamic competitive advantage.

According to Rosenfeld (1997), the success of a cluster is determined by several factors, namely (1) specialization, (2) the capacity of research and development, (3) knowledge and skills, (4) human resource development, (5) network collaboration and capital social, (6) proximity to suppliers, (7) the availability of capital, (8) the entrepreneurial spirit, and (9) leadership and shared vision.

4 Research Framework

This research conceptual framework can be formulated in figure 2. The framework develops by several analytical tools to assess the handycrafts-based SME's cluster and develop the strategy. It started by identification of actors who are involved in cluster using SWOT Analysis and continued to develop alternative strategy by AHP Model. Finally, this paper will recommend the policy from the priority strategy developed.

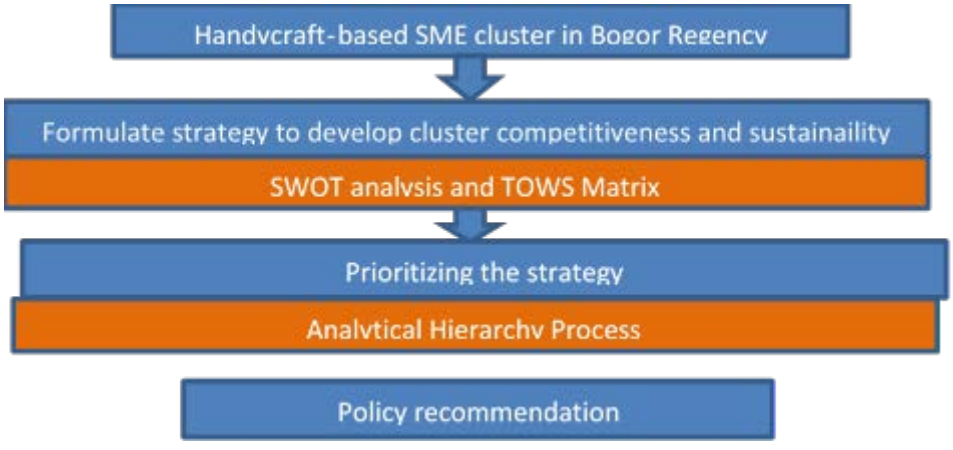

Figure 2. Conceptual Research Framework

5 Research Methodology

The research was conducted in 5 (five) villages which are cilember, leuwimalang, cisarua, cibeureum, kopo and jogjogan in Bogor regency, West Java, which were selected intentionally (purposive). The 5 (five) villages develops naturally handycrafts-based SME cluster.

Data used include primary and secondary data. Primary data was collected through stakeholders' discussion forums, questionnaires, and interviews with relevant actors, as well as existing business unit, including labor to work on it. Observations to the business unit also performed to determine the production and business conditions, particularly in capturing information about the threat and challenges. The secondary data is used in policy documents of national and local area statistics, and relevant literature.

Analyses were performed by the methods discussed in qualitative and descriptive as well as quantitative analysis. Based on the research framework, the first analysis was performed by using the Strengths, Weaknesses, Opportunities, and Threats [SWOT] analysis which is a commonly used instrument which scans internal strengths and internal weaknesses of industry and highlights the opportunities and threats of the external environment (Pesonen et al., 2000; Rauch, 2007). The SWOT analysis is used for identification and definition of the historical, geographical, social, and economic and industry related core issues and conditions existing in the cluster. SWOT analysis resulted evaluation of the Strengths, Weaknesses/Limitations, Opportunities, and Threats involved in cluster. Identification of SWOTs is essential because subsequent steps in the process of planning for achievement of the selected objective may be derived from the SWOTs. And then, The TOWS Matrix will provide alternative strategies of cluster development.

Weihrich (1982) developed TOWS as the next step of SWOT in developing alternative strategies. TOWS matrix provides means to develop strategies based on logical combinations of factors. The TOWS Matrix is a conceptual framework for a systematic analysis that facilities matching the external threats and opportunities with the internal weaknesses and strengths of the handycrafts-based cluster. It indicates four conceptually distinct alternative strategies, tactics and actions for handychandycrafts-based SME's cluster development. The TOWS analysis is shown the process of strategy formulation.

In order to determine the best strategic consolidation option for the handycrafts-based SME cluster, this study utilized the Analytic Hierarchy Process (AHP) framework to guide the decision process. Analytical hierarchy process (AHP) has been applied in this study to prioritized strategies develop by TOWS matrix. AHP is a problem-solving framework and flexible, systematic method employed to represent the elements of a complex problem. It is based on the three principles: decomposition, comparative judgment and synthesis of priorities. The priorities of criteria and sub-criteria are synthesized to establish the overall priorities for decision alternatives (Saaty, 1980).

6 Results and Discussion

6.1 Identifying Charactristics of Handycrafts-Based SME's in Cisarua Districts

According to observation and Focus Group Discussion (FGD), based on core competencies in handycrafts-based SME's cluster taken from 6(six) villages, it can be seen that every village has their own potential creative industry and target of market.

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Name of Village	Handycrafts Product	Target
Cilember	Handmade -paper flower	(1) Taman Matahari recreation Area, (2) Taman Safari , (3) Distributor outside Bogor Area , (4) Cimory Restaurant , (5) other cooperation
Cisarua	Knitted	
Jogjogan	Handmade-Wood Flower	
Kopo	Kids-Toys	
Leuwimalang	handmade Accesories and dolls	
Cibeureum	Knitted	

Figure 2. Lists of Core Products from each village in Cisarua District

6.2 Strategies to Develop Handycrfats-based SME Cluster in Bogor regency

The SWOT analysis is used for identification and definition of the basic elements from existing condition which obtained by interview, Focus Group Discussion with the handycrafts-based SME's owner and their employee. The analysis has been done keeping in mind the historical, geographical, social, economic and industry related core issues and conditions existing in the cluster. The following chart lists the SWOT components and their implications, which are the likely points of interventions and the basis of a long run strategy

External Factors (EFAS Table) / Internal Factors (IFAS Table)	***Opportunities (O)*** 1. Supporting industries 2. Chances	***Threats (T)*** 1. Related Industries 2. Government Regulations 3. Handycrafts Industries Competitor
Strengths (S) 1.Natural Resources 2.Human Resources 3.Technology 4. Domestic Market 5.Export Market	***SO Strategies*** • improve linkages between businesses in the upstream and downstream industries into multi stakeholders platform • Enhancing the role of supporting institutions • Enhancing employee's /handycrafter's capacity building based on socialpreneurship	***ST Strategies*** • Government institutions must be proactive, effective and efficient. • Advance Product value added
Weaknesses (W) 1.Structure 2.Strategy 3.Capital 4.Infrastructure	***WO Strategies*** • Increased trust building, cooperation and networking between businesses on the value chain	***WT Strategies*** • Creating a conducive business climate

Figure 3. TOWS Matrix of Bogor regency : Handycrafts-based SME Cluster

The SWOT analysis above put the diamonds porter factors into strength, weakness, opportunity and threat. It shown above, natural resources, human resources, technology, domestic market and export market classified as the strengths factors, because its contribution to enhance the cluster development. Meanwhile, structure, strategy, capital and infrastructure classified as weakness, due lack of neither availability nor its contribution to the Bogor regency handycrafts-based SME cluster development.

External factors in SWOT analysis, classified supporting industries and chances as the opportunity. Those factors are encouraging cluster development, while other external factors such as related industries, government regulations and other handycrafts –based SME cluster competitor are not supporting and become threat to the handycrafts industry.

Based on the SWOT analysis, the TOWS matrix identify strategic alternatives to develop sustainable and competitive handycrafts-based cluster. There are 5 alternative strategies available from TOWS matrix.

- The first group of alternative strategy is base on Strengths and Opportunities (SO) – which the strategy to maximize strengths to take advantage of the opportunities. In this case are:
  - Improve linkages between businesses in the upstream and downstream industries into multi stakeholders' platform in handycrafts-based SME's cluster. The current condition in handycrafts-based cluster has not a real conducive linkage between actors in handycrafts chain business. For years, the actors could not reach a common goal and shared vision to develop sustainable and competitive cluster. It is now, become urgent to improve interaction among actors to have better business linkages.
  - Enhancing the role of supporting institutions in handycrafts-based SME's cluster. As we know, supporting industry played vital role in encouraging handycrafts-based SME cluster in particularly tourism and cullinary cluster. The involvement of recreation area around Bogor regency for example : Cimory, Taman Safari, Taman Bunga Nusantara, Puncak Pass, Gunung Mas tea walk becomes a reason behind the success of handycrafts-based SME Cluster. However, the improvement and enhancement are important not just limited to the tourism sector but also to other supporting institutions such as banking industry and government territory.
  - Enhancing employee's capacity building based on socialpreneurship in handycrafts-based SME's cluster including (a) Increased healthcare and caregiver demand, (b) Healthy Lifestyles. (c) Youth employability, (d)Academic Recognition, (e) increased the global entrepreneurship index for Indonesia and (f) Reduced Government Expenditures,. This factor is one of the key success factors in implementation of Good handycrafts culture Practices and market access industry. The Bogor regency was succeeded to transform micro industry into small and medium industry in handycrafts-based cluster . Therefore, the enhancement of employee's skills and knowledge are part of the long term strategy to overcome future challenges specifically in preparing Asean Economic Community (AEC) 2015.
- The next group of alternative strategies from TOWS matrix is Strengths and Threats (ST) – the strategy of taking advantage of strengths to avoid real and potential threats, which are :
  - Government institutions must be proactive, effective and efficient to develop handycrafts-based SME's cluster. The role of government should be increased to develop the cluster, because its importance to regulate and support and maintain the handycrafts business atmosphere and broaden the success of the cluster becomes national competitive cluster. It is unavoidable in every nation, to have political will and grand strategy to learn and duplicate competitiveness in handycrafts-based SME's cluster.
  - Advance Product value added must be developed in handycrafts-based SME's cluster. With an opportunity in the international market, it is important for business sector to meet the demand and fulfill the requirement asked by different country which related to tourism industry in the world . Therefore, adding a value added and product diversification are important factor to develop competitive business.

There is only one alternative strategy of Weaknesses and Opportunities (WO) – which using opportunities to overcome the weaknesses Strategy which is: Increased trust building, cooperation and networking between businesses on the value chain in handycrafts-based SME's cluster. This is importance strategy in building competitiveness along the chain in handycrafts-based SME's cluster. The history of handycrafts –based SME's cluster shown trust building is a major influencing factor in the development of handycrafts-based SME's cluster in

- Bogor regency. The cluster has to learn from trust building in Bogor regency which lead to Bogor regency competitiveness and success.

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- The last alternative is Weaknesses and Threats (WT) – which is minimize weaknesses and avoid threats, which the Strategy is : Creating conducive business climate in handycrafts-based SME's cluster. For years, the handycrafts-based SME's cluster is having problem and challenges, and now it is time to build business climate which encourage the competitiveness and sustainability of handycrafts-based SME's cluster.

Those alternative strategies should be implemented in achieving sustainable and competitive handycrafts-based SME's cluster . However to have better result, the strategies need to be prioritize, which will be helpful in implementing the strategy to reach its goal.

6.3 Handycrafts-based SME's Cluster Strategy Base on Strategic Priority

To find the best strategy base on strategic priority to develop handycrafts-cluster SME's cluster, a model of Analytic Hierarchy Process (AHP) framework is set up to guide the decision process. The AHP model deals with prioritizing of decision making by reducing complex decisions to a series of pair wise comparisons and then synthesizing the results. Adaptation of the Analytic Hierarchical Process to this model set identification of the goal, the criteria (the factors that affect the objective), actors and the alternative strategies. Those AHP model and calculation result are as follows:

1. The goal to be Sustainable and competitive handycrafts-based SME's cluster.
2. The factors (criteria) were including (from SWOT analysis):
   a. **Related and Supporting Industries (0.471)**
   b. Factor Condition. (0,295)
   c. SME's Strategy and Rivalry. (0,888)
   d. Demand Condition (0,146)
3. The actors were (from Focus Group Discussion)
   a. **Owner (0,320)**
   b. Employee (0,232)
   c. Universities (0,176)
   d. Export Market (0,111)
   e. Government (0,160)
4. The alternatives strategies available (from TOWS Matrix) were
   a. Improve linkages between businesses in the upstream and downstream industries into multi stakeholders' platform in handycrafts based SME's cluster. (0,285)
   b. Increased and creating conducive bussiness i.e trust building, cooperation and networking between bussiness on the value chain (0,245)
   c. Enhancing the role of supporting institutions and government must be proactive, effective and efficient (0,110)
   d. Advance Product value added must be developed in Handycrafts-based SME's cluster (0,069).
   e. **Enhancing employee's capacity building based on socialpreneurship in Handycrafts-based SME's cluster. (0,290)**

AHP analysis shown that to reach the goal to be sustainable and competitive cluster, the strategy which should be the priority is to improve linkages between businesses in the upstream and downstream industries into multi stakeholders' platform in Handycrafts-based SME's cluster. Moreover, the strategy should be implemented by the owner as the main actors and champion in the cluster, to invite other actors to develop Handycrafts-based SME's cluster together. It is understandable, since the handycrafts-based SME's cluster in Bogor regency was built under their business strategy, so their willingness to open

their success and shared vision will endorse the sustainability and competitiveness on Handycrafts-based SME's cluster. The owners of Handycrafts-based SME's cluster is a main factor in related and supporting business as key factor in sustainability and competitiveness. Their reputation as the main actor also the manager will be a guarantee to attract financial industry and ensuring international market. Therefore, territory government and universities as supporting actors in handycrafts industry could play role as avalist to handycrafts-based SME's cluster.

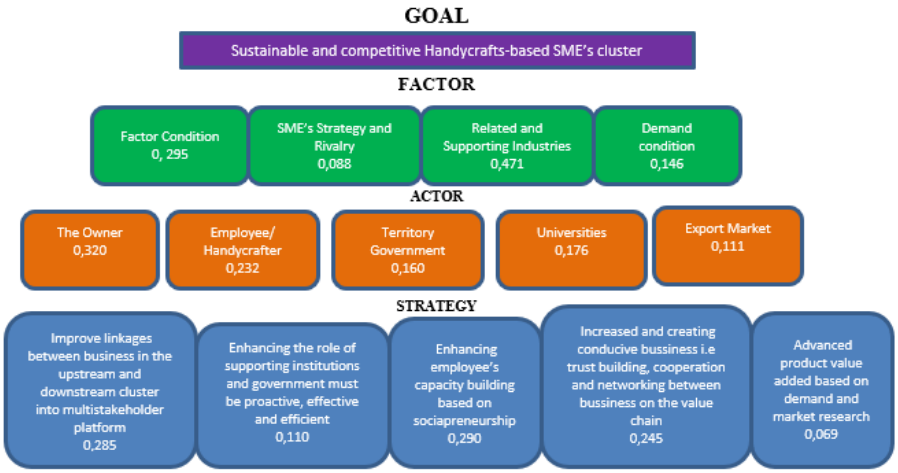

Figure 4. Analytical Hierarchy Process of handycrafts-based SME's cluster Development Strategic Framework.

7 Conclusion and Recommendation

A lesson learned from the successful cluster development in Bogor regency has shown the important of the owner's role and innovation contribution to the cluster. It is ensuring findings that a sustainable and competitive business in handycrafts-based SME's cluster must have sustainable and competitive perspective, along with long term strategy.

There are 5strategies could be implemented to develop sustainable and competitive handycrafts-based SME's cluster, taken from the alternative strategies formulate from TOWS matrix. However, it is recommended to implement the strategy base on priority especially strategy in Enhancing employee's capacity building based on sociapreneurship including (a)increased healthcare and caregiver demand, (b) Healthy Lifestyles, (c) Youth employability, (d) Academic Recognition, (e) increased the global entrepreneurship index for Indonesia and (f) Reduced Government Expenditures. Other alternative strategies will follow as AHP results order.

REFERENCES

[1] Pasonen, M., Kurttila, M., Kangas, J., Kajanus, M., and Heinonen, P. (2000) Assessing the priorities using A'WOT among resource management strategies at the Finnish forest and park service, Forest Science, Vol. 47, No. 4, 534-541.
[2] Porter, M.E. (1979) How Competitive Forces Shape Strategy, Harvard Business Review, March/April 1979.
[3] Porter, M.E. The competitive advantage of nations. New York: Free Press. (1990)
[4] Porter, M. E. 1998, Clusters and the new economics of competition, Harvard Business Review, Nov/Dec98, Vol. 76 Issue 6, p77

Copyright © Society for Science and Education United Kingdom

[5] Rauch, P. (2007) SWOT analyses and SWOT strategy formulation for forest owner cooperations in Austria, Eur J Forest Res, vol. 126, 413-420.

[6] Rosenfeld, Stuart A, 1997, Bringing Business Clusters Into The Mainstream of Economic Development, European Planning Studies, 5.

[7] Saaty, Thomas L. 1980. The analytic hierarchy process: Planning, priority setting, resource allocation. McGraw-Hill International Book Co.

[8] Weihrich, H. (1982) The TOWS matrix-A tool for situational analysis, Long Range Planning, Vol. 15, No. 2, 54-66.

[9] World Economic Forum, The Global Competitiveness Report 2009-2010