Encouraging Competitive Advantage of Creative Industry Using Cluster Analysis: An Evidence from Creative Industry in Malang District, Indonesia

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Abstract

This research investigates the condition of creative industry based on fourteen characteristics of competitive advantage including growth in turnover, transition in business, management principle change, satisfaction with enterprise performance, comparison with competitor, leadership, strategic planning, implementation to the information, human resource practice, quality process management, customer and market focus, existence of local support institutions, workforce mobility, and existence of cooperative. Samples were recruited from 200 creative industries in Malang district. All samples represented 15 types of creative industry in Indonesia such as advertising, architecture, art, design, etc. Data were analyzed using cluster analysis. Based on agglomerative clustering, the results show that there are two clusters of creative industry in Malang area with low and high competitive advantage.

Keywords

Research Background

Since a few years ago, new challenges and issues related to knowledge, technology, and imagination that combined with creativity faced by the global economy. The economic dimension of the creative sector in Ukraine increases contribution to international trade and great potential for further development (Skavronska, 2017). Even though, the creative industry contributes for roughly just 5 percent of the GNP of the European Union AND 6 percent in the USA (Parkman et al., 2012, however, the creative industry as an indicator of stabilization of country's competitiveness (Skavronska, 2017).

The creative industry is a business type which uses creativity as the foundation. The government divides creative industries in Indonesia into fifteen types such as advertising, architecture, art, handmade product, design, fashion, film, interactive game, music, art performance, publishing, computer service, radio and TV, research & development, and culinary. In Indonesia, the creative industry becomes a popular business type in the perfectly competitive market. In the perfectly competitive market, all of the businesses should have regular innovation in order to meet customer expectations. Most of the creative industries in Indonesia are categorized as small medium enterprises (SME). Their sales volume, number of employees and annual profit are only at the level of small or medium business. The weak business performance of creative industry caused by competitive strategy. The foreign product is still the top choice of consumers that commonly less price with the quality tends to be better (Auliana, 2016). Indonesia as a nation which has a huge number of SME in the world should give a bigger concern on their competitive positions.

In addition, Indonesia as a member of ASEAN should prepare its local business to catch up ASEAN market. Starting from 2015, ASEAN becomes one market in which all of the businessmen can import and export their products to other countries easier than before. In order to analyze competitive advantage of certain industry, several variables can be used. Sharma and Wadhanan (2009) describe that competitive advantage of SME can be measured using business transition, management principle change, change in turnover, change in

market demand, goals and objectives, performance compared to the competitor, firm performance satisfaction, and growth orientation. In addition, in order to develop each cluster, it should have a transfer knowledge among cluster member (Asheim & Isaksen, 2002). This transfer knowledge is measured using several variables such as the existence of cooperative, local support institution, workforce mobility and external relationship of the cluster (Asheim & Isaksen, 2002; Benton, 1993; Brusco, 1993; Malmberg & Power, 2005; Meyer-Stamer, 1998; Schmitz, 1993; Zeng, 2006). In this research, there are fourteen variables (growth in turnover, transition in business, management principle change, satisfaction with enterprise performance, comparison with competitor, leadership, strategic planning, implementation to the information, human resource practice, quality process management, customer and market focus, existence of local support institutions, workforce mobility, and existence of cooperative) used to measure the competitive advantage of creative industry in Indonesia and to divide the creative industry into several clusters based on the competitive advantage variables and transfer knowledge elements. It can be concluded that this research uses more specific variables to describe the competitive condition of creative industry in Indonesia.When some of the industries have the strong competitive advantage and good transfer knowledge, they can grow up steadily into large enterprises and become market leaders. Therefore, this research entitled "Encouraging Competitive Advantage of Creative Industry Through Cluster Analysis in

Indonesia (An Evidence from Creative Industry in Malang District, Indonesia)"

Literature Review

Creative Industry

Creative creative industry is a business type which focuses the characteristics of creativity and innovation. Howkins (2001) defines creative industry as all of the economic activities which use creativity, culture, and environment as the foundation and goal. In addition, Simatupang (2007) describes that creative industry is a system collaboration between the organization and human resources in the production and distribution activities which are based on art, culture, and entertainment. Indonesian Government Rules on 2009 Number 6 explain that creative industry consists of advertising, architecture, art, handmade product, design, fashion, film and photography, interactive game, music, art performance, publishing, computer service, radio and television, research & development and, the addition is, culinary. Mt. Auburn Association proposes three key elements of creative industry such as:

- The creative cluster, which means all of the industries that produce and distribute product and service related to culture.
- The Creative Workforce, which means all of the employees who have been trained with skills in culture and art to empower their jobs.
- The Creative Community, which means some of the creative industries located in the same geographic area.

Competitive Advantage

The industry is the basic unit to understand the competition condition. The industry is a group of competitors producing their products or services and getting a larger market share which is a competitive environment in this group. Michael Porter (1997) describes that there are two focuses of competitive strategy including industry structure and position within the industry. Porter also explains that in any industry, there have been five competitive forces already existed; (1) The threat of new entrants; (2) The threat of substitute products or services; (3) The bargaining power of suppliers (4) The bargaining power of buyers (5) The rivalry among the existing competitors. Industry structure also has a significant influence on competitive advantages because of the following reasons:

Different industry needs different requirement to be successful. Therefore, when a country provides good competitive environment, the business in that nation will grow up.

- An industry that has a higher product standard can get a good position in competition area. In this case, the product standard depends on the capacity of that industry.
- Industry can get the outstanding opportunities through changing the structure toward new industry. Therefore, the sustainable innovation should exist.

Research Method

Sampling Method

The population of this research is all creative industries in Malang city, Batu city and Malang Regency, Indonesia. The number of population is unknown because it increases every time. Based

on Roscoe's formula, a research with the unknown number of population can take from 30 to 500 respondents to describe the population characteristic. In this research, 200 respondents were asked to answer all questionnaire items. All of the items in the questionnaires are represented by 5 Likert-scales and proved as having more than 0.6 Cronbach Alpha score when they are used in the previous studies.

Measurement Method

The purpose of this study is to measure the number of clusters and also the member of creative industry in each cluster. In addition, the analysis employed clustering method to explore the characteristics of each cluster. Cluster analysis is a group of multivariate techniques whose primary purpose is to group objects based on the characteristics they possess. This cluster analysis is absolutely different from factor analysis.

Hair, et al (2010) explain that factor analysis makes the grouping based on the patterns of variation (correlation) in the data whereas cluster analysis makes the grouping on the basis of distance (proximity). This research analysis used K-means algorithm because it created a single set of clusters, with no particular organization within them. Therefore, all different types of the creative industry could be in one cluster depending on their characteristics related to observed variables. The K-means algorithm is a popular data clustering algorithm. Before analysis cluster using K-means algorithm was conducted, it required simple analysis on the number of clusters used to run K-means algorithm (Paul, 2004).

Findings

The characteristics of creative industries which are used as respondents are explained in the following table.

Table 1. The Number of Creative Industry Samples

No.	Types of Creative Industry	Amount
1	Advertising	17
2	Architecture	9
3	Art	21
4	Hand made product	27
5	Design	12
6	Fashion	19
7	Film and Photography	19
8	Interactive Game	8
9	Music	13
10	Art Performance	4
11	Publishing	7
12	Computer Service	8
13	Radio and TV	3
14	Research and Development	8
15	Cullinary	25
	Total	200

It can be concluded that the variety of samples represented the variety of population of creative industry in Indonesia. In addition, this research was conducted in three different areas which were Malang City, Malang Regency, and Batu City. Therefore, all of the respondents come from three different regions which are described in the following table.

Table 2. The Dispersion of Samples

No.	Area	Amount
1	Malang City	80
2	Malang Regency	60
3	Batu City	60

In the data analysis using K-means algorithm clustering, there were two kinds of clusters which consisted of 200 creative industry samples in this research.This following is the results of the clustering analysis.

Table 3. Number of Creative Industry Samples in Each Cluster

Cluster	Amount	Dominant Types of Creative Industry
1	82	Hand made product
		Cullinary
		Art
		Art performance
		Design
		Advertising
		Publishing
2	118	Film and photography
		Game interactive
		Architecture
		Fashion
		Research and development
		Music
		Radio and TV
		Computer service

Basically, there were 15 types of creative industry in each cluster, but each cluster had different dominant types of creative industry membership. The following table describesthe characteristics of each cluster based on 14 competitive advantages and knowledge transfer variables.

Table 4. Characteristics of Each Cluster

Initial Cluster Centers		
	Cluster	
	1	2
Growth_Turnover	2	4
Transition_Business	3	5
Management_Change	2	3
Satisfaction	2	5
Comparison_Competitor	2	5
Leadership	3	4
Strategic_Planning	2	4
Information	3	5
Human_Resource	2	5
Quality_Process	2	5
Market_Focus	3	5
Local_Support	3	2
Workforce_Mobility	3	3
Cooperative	3	1

Table 5. ANOVA

	Cluster		Error		F	.Sig
	Mean Square	Df	Mean Square	df		
Growth_Turnover	18.061	1	529.	198	34.169	000.
Transition_Business	29.769	1	495.	198	60.079	000.
Management_Change	42.999	1	454.	198	94.811	000.
Satisfaction	17.455	1	287.	198	60.885	000.
Comparison_Competitor	9.662	1	347.	198	27.838	000.
Leadership	15.394	1	337.	198	45.627	000.
Strategic_Planning	28.680	1	294.	198	97.582	000.
Information	33.303	1	324.	198	102.845	000.
Human_Resource	37.212	1	354.	198	105.041	000.
Quality_Process	7.407	1	202.	198	36.712	000.
Market_Focus	3.662	1	197.	198	18.622	000.
Local_Support	16.228	1	603.	198	26.922	000.
Workforce_Mobility	11.777	1	651.	198	18.080	000.
Cooperative	196.	1	935.	198	210.	647.

The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.

The first cluster had several characteristics which represented low competitive advantages. Most of the creative industry scores in this cluster were less than 3 of the fourteen variables. It was described that creative industry in this cluster had the low level of innovation (transition in business), some of them did not have strategic planning and also had less concern on the employee development program. The dominant categories of creative industry in this cluster were (1) Handmade product, (2) Culinary, (3) Art, (4) Art performance, (5) Design, (6) Advertising and (7) Publishing. For the second cluster, most of the creative industry members had high competitive advantages. Most of them concerned innovation, employee development, customer expectation, relationship among related industry and also brought workforce mobility for their employees. In this case, the creative industries have been ready to meet international competition among regional businessman. Therefore, most

of creative industries in Malang area have been fulfilled the high competitive advantage especially those in the categories of (1) Film and photography, (2) Game interactive, (3) Architecture, (4) Fashion, (5) Research and development, (6) Music, (7) Radio and TV, and (8) Computer service. Regarding these results, the government can create new policies to increase the competitive advantage of each cluster using the categories membership approach and the condition of each variable.

Conclusion

Based on this research findings, it can be concluded that creative industry in Malang district was divided into two clusters which the first cluster had the low competitive advantage and the second cluster had the high competitive advantage. To provide government policy for each cluster, there should be a deep analysis of the characteristics of the industries based on the 14 observed variables. Based on the findings of the research, the levels of the 14 observed variables were different for each cluster. For instance, in the high-level competitive advantage cluster, the role of local support institution and cooperative tends to be low, therefore, the government is suggested to focus on these two variables. It is recommended to use the research findings as a consideration to provide further local government policies.

Notes on Contributors

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Her researches concern on Assets Management, Probitability or based on Finance field. But she still takes the time to research about other, for instance "Effect of Strategic Management Dimensions on Corporate Entrepreneurship Intensity at SMEs of Tempe Chips in Malang" indexed scopus.

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