

Competitiveness In Global Transformation : A Systematic Review

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Abstract

Industrialization and globalization affect the world's view of carrying out the economy. The company cannot conduct business as usual because of the openness of international markets and information. Increasing population, cultural change, economic movements throughout the world are the effects of both of these. Rapid changes to consumer needs and product diversity make market conditions more competitive. Every country in the world competes to become the most competitive economy by increasing its competitiveness to survive in the era of globalization so that, national competitiveness becomes an important point for all countries in the world. The purpose of this paper is to identify gaps from previous studies for contributing new research ideas. This paper adopts a systematic literature review method to find out the state of the art based on general characteristics (conceptual and measurement), solution methodology and strategic level. This paper contributes to give a new idea in competitiveness research, which categories that are useful for solving competitiveness problems at each level, including International, National and Firm

Keywords

International Competitiveness, National Competitiveness, Firm Competitiveness, Strategy, Globalization

1. Introduction

Industrialization is a process that produces products using mechanical and chemical-mechanical expertise with specific resources (Biernacki, 2001). Industrialization is also marked by the increasing use of technology and changes in the way of the view of the company accompanied by an increase in population, urbanization, cultural differences, and shifts in power between countries. Therefore, industrialization is essential in human welfare (O'Brien, 2001)

At present, in every country dealing with the so-called globalization era. Globalization is changing the way companies do their business as usual because of the openness of international markets, openness of information, the use of low resource costs in developing countries and efficient supply chain systems. This incident makes Globalization affect all lines of life such as economic, social and political throughout the world (Chatha & Butt, 2015; Kuivanen, 2008; Manyika, 2012; Scapolo, Geyer, Boden, Dory, & Ducatel, 2003)

The manufacturing industry faces market uncertainty, product diversity and changing customer needs very quickly when market conditions become very competitive (Chatha & Butt, 2015; Manyika, 2012). At the same time, environmental issues become very important to consider (Chatha & Butt, 2015; Garetti & Taisch, 2012; Kuivanen, 2008; Qiu, 2009; Scapolo et al., 2003). The changes that almost occurred in all these lines have made every country in the world compete to become the most competitive economy by increasing national competitiveness to build global competitiveness and be able to survive in the era of globalization (Fahy, 2002; Setyawan, 2011). National competitiveness is one of the critical points for the government and industry of a country, also expressed by (Dong-sung & HwY-Chang, 2013).

Achieving the goal of becoming a country that has competitiveness, attention needs to be paid to the performance of the domestic industry related to various factors, including non-financial and financial factors to be able to determine the sustainability of an industry and the competitiveness of the industry so that industry players can be properly directed in determining a decision (Bouranta & Psomas, 2017; Phusavat & Kanchana, 2007). The purpose of this paper is to identify gaps from previous studies for contributing new research ideas. This study uses a systematic literature review method to find out the state of the art research based on general characteristics (conceptual and measurement), solution methodology and strategic level

2. Literature Review

The concept of competitiveness begins with trade theory, which states that wealth is set by endowments (Smith, 1937). Ricardo proposed in *The Principles of Political Economy and Taxation* with his method called comparative advantage which states that even if a country does not have an advantage in producing commodities when compared to other countries, but mutually beneficial trade can still take place, as long as the price ratio between countries is still different when compared to no trade (Dong-sung & Hwy-Chang, 2013). Thereafter (Porter, 1990) first introduced the concept of competitive advantage, which states that the success of an industry in the competition is determined by differences in national values, culture, economic structure, institutions and history. The development of the era to bring the concept of competitive advantage into *The Theory of Systemic Competitiveness* which arose as a challenge to the neo-liberal view of competitiveness focused on isolated companies and macroeconomic determinants (Esser, Hillebrand, Messner, & Meyer-Stamer, 1996)

2.1 International – Level competitiveness

The term international competitiveness according to (Capobianco-Uriarte, Casado-Belmonte, Marín-Carrillo, & Terán-Yépez, 2019) was first introduced in the HMS treasury report in 1983 which was defined as "International competitiveness means the ability of the producers to compete successfully in competing for world markets and with imports in its own domestic market". Competitiveness is generally measured by the shares which a country attains in its markets, due to its being made for its size and stage of development. Competitiveness, in this very general sense, comes to being synonymous with overall performance.

In line with changing times, the definition of international competitiveness develops from the initial definition, where several factors are added including Public Function (Competitiveness, 1985), government roles (Fagerberg, 1988; Krugman, 1994), sustainability (Mulatu, 2016) to the concepts issued by the world competitiveness center in (Capobianco-Uriarte et al., 2019) which states that the competitiveness of a country depends on the way of good governance based on competence and resources. Sustainable development is needed to supporting the new perspective, where current competitiveness must pay attention to the sustainability of competitiveness in the future which must include growth in quality of life, resource management, social equality, human development and welfare (Capobianco-Uriarte et al., 2019)

2.2 National – Level Competitiveness

(Porter, 1990) Started the concept of competitive advantage of the nation by conducting studies in ten countries that have advanced industries including (Germany, Italy, Japan, Singapore, South Korea, Switzerland, England, Denmark, USA, and Switzerland). The study was conducted in more than a hundred industries and found success, which in turn made Porter study the competitiveness of micro industries into the macro competitiveness of the nation. The concept of competitive advantage for nation porters is better known as the Diamond Framework which uses approaches including (1) Factor Conditions namely where the role of the state in mastering human resources, infrastructure, knowledge and capital resources and also natural resources, (2) Demand Conditions refer to conditions of domestic demand from an industry where if demand from consumers increases will make the industry develop which makes industry investment increase, the industry can adopt technological changes more quickly and can also make national products of international quality so that international markets can be achieved, (3) Related and supporting industries, which are industries depend on other industries alliance to get added value for consumers and become more competitive, (4) Firm, strategy, structure, rivalry is about how the country creates, manages and organizes industries in increasing competitiveness. The four factors are described in the form of diamonds which according to Porter affect the domestic industrial environment in operating and competing to increase competitive advantage Diamond Framework model can be seen in figure 1

Diamond Framework has limitations in its application to developing countries such as Korea, as stated by (Cho, 1994). (Cho, 1994) Initiated a nine factor model that emphasizes two categories to explain the concept of national competitiveness, namely the physical category and the human category. Physical categories include natural

resource factors (resource endowment), business environment (business environment), related supporting industries, and demand conditions, where the combination will determine its competitiveness at the international level. Meanwhile, the human category includes factors of workers, politicians, and bureaucracy, employers as well as professional managers and technology engineers. The eight factors that fall into these two categories, they are called internal factors. An external factor to complement the nine-factor model is a chance. The differences between the nine-factor models and Porter's diamond models are in the division of factors, and in addition to new factors. The diamond model includes both natural resources and labour in factor conditions, but the nine-factor model places natural resources under-endowed resources, while labour is included within the category of workers (*Dong-sung & Hwuy-Chang, 2013*). The Nine Factor Model can be seen in Figure 2

National competitiveness report already exists since 1989, called the International Institute for Management Development (IMD) and The World Economic Forum (WEF) in 1995. They are the two most popular institutions publishing national competitiveness reports. Both of institutional reports have different views and models for defining competitiveness. IMD implies that GDP and productivity are proxies for competitiveness, but the IMD argues that competitiveness cannot be reduced to the mere notions of GDP and productivity. In contrast, the WEF accepts GDP and productivity as proxies for competitiveness (Cho & Moon, 2005). While both institutions have a different definition of competitiveness, but they have an identical factor in defining competitiveness. First of all, the IMD has chosen two factors, domestic economy, and internationalization and then added six others – government, management, finance, infrastructure, science, technology, and people. However, there are conceptual redundancies between the first two factors and the other six because the latter six factors can be classified as either domestic or international variables. In the WEF report, the first two factors are altered slightly: the domestic economy becomes civil institutions and internationalization becomes openness, while the other six factors remain the same. Although they are now using different models, both the IMD and WEF reports used to have eight variables that were almost identical, but they produced quite different results. Differences between both can be seen in table 1 and table 2

Table 1 Original Models of the Two Reports (1996-2000)

IMD Report (1989 – 2000)	WEF Report (1996 – 1999)
Domestic Economy	Civil Institutions
Internationalization	Openness
Government	Government
Management	Management
Finance	Finance
Infrastructure	Infrastructure
Science and Technology	Technology
People	Labor

Table 2 Revised Models of the Two Reports

IMD Report (2001-)	WEF Report (2000-)	
Economic Performance	Aggregate Country Performance Indicators	Macroeconomic Environment
Government Efficiency	Public Institutions, Law	Public Institutions, Corruption
Business Efficiency	Company Operation & Strategy	Domestic Competition
Infrastructure	General Infrastructure	Cluster Development
	Technological Innovation and Diffusion	Information and Communications Technology
	Environment Policy	

All this time, measuring the competitiveness of the nation is using IMD and WEF. (Garelli, 2006) proposed the competitiveness cube. The Cube theory defines four competitiveness forces: aggressiveness vs. attractiveness, assets vs. processes, globality vs. proximity, and social responsibility vs. risk-taking. He argues that competitiveness is how a nation manages the totality of its resources and competencies to increase the prosperity of its people. As well as the Michael Porter's Diamond Theory, Garelli said that his theory underlines that the management of competitiveness should be both systemic and systematic: systemic means that the interaction between the factors of competitiveness is just as important as the analysis of the factors themselves (for example, when focusing on developing infrastructure, it is not just about building airports, railroads, railways, ports, etc. it is also about connecting all these facilities into one integrated value-added logistical system based on the most modern technologies); systematic means that a competitiveness strategy needs to be coherent over time. Business is pretty adaptive to the most adverse conditions provided that the rules are clearly defined and predictable. The competitiveness Cube theory can be seen in figure 3

2.3 Firm-Level Competitiveness

(Chikán, 2008) argues that there is no national competitiveness in the economy if there is no competitiveness in the company/organization. The development of the national competitiveness economy is very dependent on the influence of the competitiveness of companies/organizations. To be able to achieve organizational competitiveness, there have been many studies on management strategies, one of the goals in its application is competitiveness. (Ajitabh & Momaya, 2004) In their study modelling strategies in increasing company competitiveness. The model provides an essential view of strategy, human resources, and operations when the view of resources is only focused on assets and capabilities. Some generic types of strategies that are often used in competitiveness improvement studies include: (1) (Porter, 1980) introducing the concept of strategy to enhance the competitiveness of companies commonly called Porter's Generic Strategy which include: Overall Cost Leadership, Differentiation, Focus, (2) (Wheelen, Hunger, Hoffman, & Bamford, 2018) which divides generic strategies into three types namely growth strategy, stability strategy and retrenchment strategy, (3) (David & David, 2017) grouping strategies into four types namely integration strategy, strategy intensive, diversified strategy, and defensive strategy. The choice of this type of strategy is based on strengths, weaknesses, opportunities, and threats both from the outside environment and from the environment in a business. (4) (Bowman & Asch, 1996) It is another suitable way to analyze a company's competitive position in comparison to the offerings of competitors. As with Porter's Generic Strategies, Bowman considers competitive advantage concerning cost advantage or differentiation advantage.

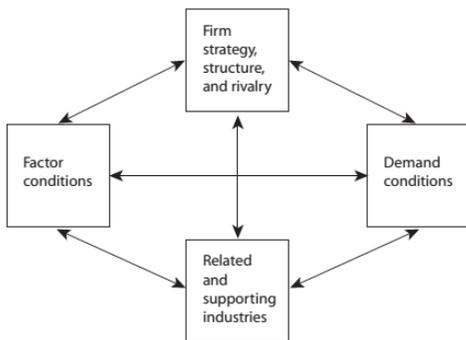


Figure 1. Diamond Framework (Porter, 1990)

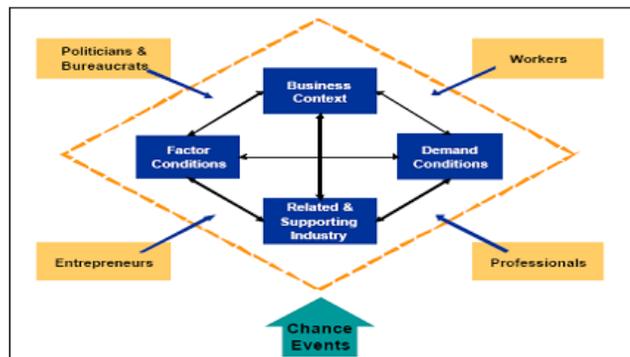


Figure 2. Nine-Factor Model (Cho, 1994)

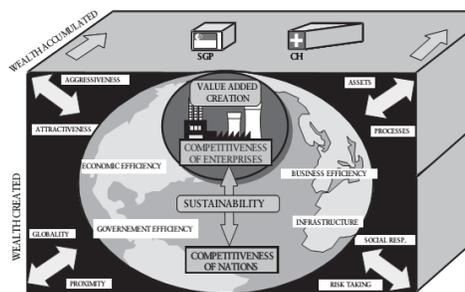


Figure 3. Cube Model (Garelli, 2006)

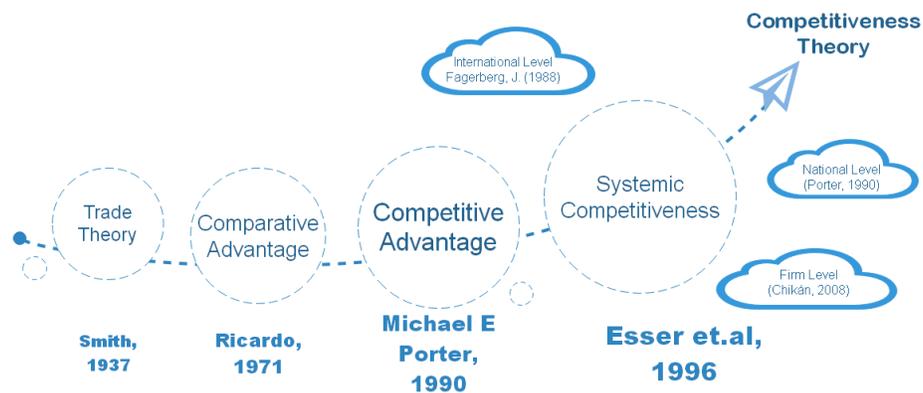


Figure 4. Competitiveness Theory (Own Elaboration)

3. Discussion

The SCOPUS database was considered for the study. More than 10,000 Related article results that used the keyword "competitiveness" during the period 1999-2019. Article subject area limits to economic, business, and management results of 6,062 appearances. The title of the article containing words with the subject of "International Competitiveness," "National Competitiveness," and "Industry Competitiveness" was added to the search filter and result of 86 article paper. The title and abstract of the paper are read and analyze in-depth, especially papers with case studies. In the analysis of the paper, a snowball method was also used to link the paper with the developed competitiveness theory and model, which eventually resulted in 18 papers. The next step is to analyze the content of the article by reviewing the context, objectives, methods, results and conclusions. The final step is to analyze and categorize that paper based on general characteristics (conceptual and measurement), solution methodology and strategic level.

3.1 International Level of Competitiveness

(Carrareasi & Banterle, 2008) Assessed trade indices and ran cluster analysis to study the competitiveness of the food and agriculture industries of the European Union (EU) market. Meanwhile, (Momaya, 2011) measure competitiveness using three frameworks (diamond, human-factors, and APP). Another case of international level competitiveness applied by (Arslan & Tathdil, 2012) that using multidimensional scaling method to measure competitiveness for eleven countries and scrutinized the competitiveness indices from WEF's Global Competitiveness Yearbook, IMD's World Competitiveness Report and IFC's Ease of Doing Business Report concerning these eleven countries. Research for illustrated the factors of competitiveness that impact the innovative capacity of ASEAN countries explained by (Wonglimpiyarat, 2013) make an idea of NIS and PDM by considering different variables from various studies and proposed a common framework to discuss NISs using Porter's Diamond model. (Olczyk, 2016) identify the growth pattern in the international competitiveness literature, its core publications and key research domains based on bibliometric data from the years 1945–2015, which give us a background for conducting practical analyses of international competitiveness, especially ones using synthetic indices.

3.2 National Level of Competitiveness

(Wehrich, 1999) doing analysis advantages and disadvantages from competitiveness in Germany using TOWS. The purpose of this paper is proper identification and optimal utilization for a country's factor endowments, thereby promoting the nation's continued global success. Meanwhile, Porter's Diamond Model approach to use for analyzing the computer industry in Taiwan (Bridwell & Kuo, 2005). Another paper doing examines for perspective competitiveness of nations in Turkey, and this paper identifies those attributes a country should focus on in seeking to improve its position relative to other countries, i.e., to transition from its current cluster to the next using Artificial Neural Network (ANN) (Önsel et al., 2008). The strategic studies are conducted by (Castro-Gonzales, Espina, & Tinoco-Egas, 2017) using PLS-SEM as the methodology to increase the competitiveness of Ecuador (ECU), Colombia (COL), and Peru (PER). (Hanafi, Wibisono, Mangkusubroto, Siallagan, & Badriyah, 2019) reveal the complexity of

smelter industries in Indonesia. The paper also addresses the causes of problems and the interaction of variables using a causal loop diagram. System Dynamic approach is using in this paper.

3.3 Firm-Level Competitiveness

Comparing the automotive industry of China, India, and South Korea using a double diamond model demonstrated by (Sardy & Fetscherin, 2009). The competitiveness index of the Chinese automobile industry was found to be better in both domestic and international conditions as compared to that of South Korea and India. (Sun, Fan, Zhou, & Shi, 2010) analyzed the regional real estate industry competitiveness by taking Beijing and Tianjin, two cities of China. The diamond model was utilized for analyzing competitiveness. The empirical evidence supports that related industries followed by the demand factors have a significant influence on the competitiveness of the real estate industry. Another technique studied by (Vidal-Salazar, Ferrón-Vílchez, & Cerdón-Pozo, 2012) that analyzed the effectiveness of coaching for training and personal development, in enhancing business competitiveness. Similarly, (Gronhaug & Stone, 2012) found the influence of the process of learning on firm competitiveness. (Sigalas, Pekka Economou, & B. Georgopoulos, 2013) using OLS to develop a measure of competitive advantage by identifying a stipulative definition, composing an operational definition and constructing a measurement variable meanwhile (Cetindamar & Kilitcioglu, 2013) developed a comprehensive generic measurement model for firm competitiveness. Growth, exports, profits, and customers and society together were used as outcome indicators. The comparative industry competitiveness using Porter Diamond Analysis in context within Indian MSMEs has been analyzed by (Kharub & Sharma, 2017). (Bhawsar & Chattopadhyay, 2018) Demonstrates the comparative competitiveness performance of four select industry clusters from India and using AHP for measuring comparative industry clusters.

Table 3. Competitiveness Research GAP

No.	Researcher	Methodology	Case Study	Level
1	(Carraresi & Banterle, 2008)	Cluster analysis to study the competitiveness	Food and Agriculture EU market	International
2	(Momaya, 2011)	Measuring competitiveness using the Porter Diamond Model, Human Factor, Asset-Process Performance	Nano Technology Industry	International
3	(Arslan & Tathdil, 2012)	Measuring 11 countries competitiveness using multidimensional scaling	Indice from IMD, WEF and IFC business report	International
4	(Wonglimpiyarat, 2013)	Using the National Intelligence Service (NIS) and the Porter Diamond Model (PDM) as a framework	ASEAN	International
5	(Olczyk, 2016)	Practical analysis international competitiveness using bibliometric data	N/A	International
6	(Weihrich, 1999)	Using TOWS for advantage and disadvantage analysis	Germany	National
7	(Bridwell & Kuo, 2005)	Porter Diamond Model Approach	Taiwan Computer Industry	National
8	(Önsel et al., 2008)	Current cluster and Artificial Neural Network (ANN) to examine competitiveness perspective	Turkey	National

9	(Castro-Gonzales et al., 2017)	PLS-SEM for strategies studies competitiveness	Ecuador, Peru	Columbia, smelter	National
10	(Hanafi et al., 2019)	System dynamic for reveal industries complexity	Indonesia Industries		National
11	(Sardy & Fetscherin, 2009)	Double Diamond Model to compare the automotive industry	China, South Korea and India	South Korea and automotive industry	Firm
12	(Sun et al., 2010)	Analysis using Diamond Framework Model	Real Estate industry in China		Firm
13	(Vidal-Salazar et al., 2012)	Analysis of coaching effectiveness for enhancing business competitiveness	40 Small Companies in North Africa		Firm
14	(Gronhaug & Stone, 2012)	Found learning process firm competitiveness	N/A		Firm
15	(Cetindamar & Kilitcioglu, 2013)	Develop a comprehensive measurement for firm competitiveness	Well known European Foundation for Quality Management Excellence Award in Turkey		Firm
16	(Sigalas et al., 2013)	Develop a measurement using OLS for firm competitiveness	N/A		Firm
17	(Kharub & Sharma, 2017)	Diamond model to knowing various determinant	Indian MSMEs		Firm
18	(Bhawsar & Chattopadhyay, 2018)	Using AHP for comparative competitive performance	Indian cluster Industry		Firm

4. Future Research

Competitiveness can be viewed from many perspectives. Interpreted from the perspective of economic, political and business strategy concepts of companies or industries. Competitiveness is defined as the ability of a sector, industry, or company to compete successfully to achieve sustainable growth in a global environment as long as the cost of the balance is lower than the revenue from the resources used.

Previous studies are used qualitatively and combining it with quantitative methods, but only a few use simulation methods as models to analyze competitiveness problems. The object in most studies has only one object that is not comparing to other objects. There is only an international level case that makes competitiveness comparison between countries. Otherwise, there are none of the International industry comparisons between countries, also competitiveness comparison between companies in one country.

5. Conclusion

The prime objective of achieving competitiveness is to strengthen a nation's economy and to make it prosperous the notion of competitiveness is kept on varying, while the basic purpose of studying it remains more or less unchanged. Starting from the results of the review above, the concept of competitiveness can be used as a policy strategy in building the strength of the national economy through the integration of macroeconomic policies that are very instrumental in strengthening national competitiveness. Problem-solving which is widely used in previous research on competitiveness is more focused on the framework and analysis approach. Research using heuristic methods that can be used to describe factors that are related and influence each other has not been done substantial, with heuristic methods that discuss innovation, technology, global value chains or other interrelated things it can be as a new research idea # 1. New research idea # 2 is to use a simulation method, where this method can emulate the actual state of the system and can improvise without disrupting the existing system. New research idea # 3 is combining the heuristic with the simulation method, where the heuristic method determines the model factor so that it can be identified properly. The model factor can be used for simulation to get a detailed model that can describe what conditions are best to make space for determining better strategies and policies.

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