ENHANCING COOPERATION BETWEEN KOREA AND JAPAN: AN INTERDISCIPLINARY APPROACH OF BUSINESS COMPETITIVENESS AND CULTURE*

HWY-CHANG MOON** AND MIN-YOUNG KIM***

Abstract

This article studies the possibility of cooperation between Korea and Japan, using analytical frameworks in both business competitiveness and cultural perspectives. The empirical results show that Korea and Japan are not in a competitive relationship and that there are several ways for cooperation between the two countries. This article further demonstrates that the two countries can complement their cultural differences and reinforce their national competitiveness structures.

Key words: Korea, Japan, Competition, Cooperation, Culture, DDD Model, OUI Model

Introduction

With an increasing global trend of forming regional economic blocs, the importance of cooperation among the countries in Northeast Asia, especially that between Korea and Japan has long been discussed without much success. In order for Northeast Asia to be in a better economic position in comparison with other economic blocs, cooperation between Korea and Japan is imminent. This must be based on correct analyses with appropriate frameworks that can incorporate fundamental variables of national competitiveness.

This article studies the possibility of cooperation between Korea and Japan through rigorous analytical frameworks in both competitiveness and cultural perspectives. After analyzing both competitiveness and cultural determinants, the article suggests ways of cooperation between Korea and Japan through simultaneous consideration of both perspectives. Therefore, this article is more comprehensive than other existing studies in analyzing the relationship between the two countries.

Several studies in the past have emphasized the importance of cooperation between Korea

---

and Japan. For example, after analyzing trade patterns between Korea and Japan, Koh *et al.* (2003) proposed the formation of a free trade agreement (FTA) between the two countries. Concerning the economic cooperation among Korea, Japan, and China, they suggested that FTA between Korea and Japan should be established before China's access to the FTA, because China might already have an incentive to join the FTA between Korea and Japan.

Lee (2004) studied the possibility and the effects of FTA among China, Korea, and Japan. They showed that the creation of this FTA would bring benefits not only to trade-related areas, but also to other areas such as customs cooperation, the IT sector, science and technology, and the environment. Similarly, based on the analysis of international input-output tables, Lee and Okamoto (2002) found that the industrial structure of Korea and Japan is deeply interdependent, especially in the electronics industry. Cheong (2004) also suggested the creation of FTA among China, Korea, and Japan to increase economic benefits in production, trade, and economic welfare.

However, these existing studies do not look at the whole picture of competitiveness and thus do not provide comprehensive analyses. Any approach, used to determine the fundamental relationship between the two countries should be based on a strong analytical framework of national competitiveness. This article will first suggest an appropriate analytical model of competitiveness for this purpose and then another model, i.e., the cultural model, to complement the competitiveness model. After related empirical tests, some useful implications will be derived.

The Competitiveness Model

The Diamond Model

Traditional trade theorists have considered capital, labor, and natural resources as sources of national competitiveness. In reality, however, there are many counter examples that go against what traditional theorists have argued. Criticizing the conventional model, for being at best incomplete and at worst incorrect, Porter (1990) introduced the diamond model in his book, *The Competitive Advantage of Nations*. As the title implies, this book was meant to replace *The Wealth of Nations* (Smith, 1776).

In this book, Porter argues that national prosperity is created, not inherited. Thus, his model is dynamic. In addition, this model is comprehensive because it creates a single model by incorporating the production factor conditions that most traditional theorists have employed, along with other important variables to explain national competitiveness. Therefore, the explanatory power of the diamond model is revolutionary.

The diamond model is composed of two parts: indigenous and exogenous variables. The indigenous variables are Factor Conditions, Firm Strategy, Structure, and Rivalry, Related and Supporting Industries, and Demand Conditions. The exogenous variables are Government and Chance Events.

Factor Conditions measure the factors of production necessary to compete in certain industries, which are further divided into two subcategories of basic factor conditions such as natural resources, climate, and population, and advanced factor conditions such as skilled labor, technology, and know-how. Firm Strategy, Structure, and Rivalry represent the national environment in which companies are created, organized, and managed, as well as the

TABLE 1. PREVIOUS STUDIES ON THE RELATIONSHIP BETWEEN KOREA AND JAPAN

	Factor Conditions	Firm Strategy, Structure, and Rivalry	Related and Supporting Industries	Demand Conditions
Lee and Okamoto (2002)	◎	•	•	◎
Koh *et al.* (2003)	•	•	•	◎
Cheong (2004)	◎	•	•	◎
Lee (2004)	O	•	◎	◎

◎: main, O: sub

nature of domestic rivalry. Related and Supporting Industries test competitiveness of industries related to a given industry or supplier industries. Demand Conditions show the nature of the domestic market for its size and sophistication.

Previous Studies Evaluated by the Diamond Model

Koh *et al.* (2003) approached the relationship among Korea, Japan and China through the analyses of market share, ESI (Export Similarity Index), RCA (Revealed Comparative Analysis), and TSI (Trade Specialization Index), using the data from world trade statistics by the UNCTAD, Asia International Input-Output Table by the Institute of Developing Economies, and the Direction of Trade Statistics by the IMF. This is clearly a trade-oriented approach to the relationship between the two countries, which falls under the Demand Conditions of the diamond model.

In their study of economic cooperation among China, Korea, and Japan, Lee (2004) covered such fields as trade and investment, customs cooperation, IT, science and technology, transportation, energy, and environment. Although this study is surely more comprehensive than other studies, it still misses some important variables to comprehensively estimate the relationship among the countries when evaluated by the diamond model. Trade and investment, and customs cooperation are elements of Demand Conditions. The IT sector, science and technology, transportation, and environment are under Related and Supporting Industries. Only energy falls under Factor Conditions and there is no variable for Firm Strategy, Structure, and Rivalry.

Lee and Okamoto (2002) empirically tested the industrial relationship between Korea and Japan, using import coefficients and production inducement coefficients. They then studied the direction of 'trade creation effects' and the changes in trade dependency ratios. In the perspective of the diamond model, these elements are under Factor Conditions and Demand Conditions.

Cheong (2004) emphasized economic benefits in population, production, GDP, and trade as a rationale for the creation of FTA among China, Korea, and Japan. Population and production, however, are variables of Factor Conditions, and GDP and trade are those of Demand Conditions. Therefore, their study considered merely half of the whole picture.

As shown in Table 1, previous studies on the relationship between Korea and Japan have focused on a limited number of determinants of the diamond model, resulting in biased and incomplete analyses. For a more complete understanding of the relationship between the two countries, we need a more comprehensive model that incorporates all important variables.

The Dual Double Diamond Model

Although Porter's diamond model is a revolutionary enhancement in explaining national competitiveness, the model is not free from criticism and has been extended in two directions (scopes and sources) of national competitiveness. The first was an incorporation of multinational activities through the introduction of the double diamond model (Rugman, 1991; Rugman and D'Cruz, 1993; Moon, Rugman, and Verbeke, 1998; Dunning, 2003). While the variables of Porter's diamond model are useful when analyzing a nation's competitiveness, the model has a narrow focus which is limited only to home-base. The second extension to Porter's original model was the addition of human factors through the proposition of the nine-factor model (Cho, 1994; Cho and Moon, 2000). Porter's diamond model is mainly designed to explain the sources of national competitiveness possessed by the economies of advanced countries, but is limited when explaining the levels and dynamic changes of economies in developing countries. The human factors in the nine-factor model drive the national economy by creating, motivating, and controlling the four physical factors in Porter's diamond model.

A good theory should be comprehensive enough to capture all of the important explanatory variables. Although the double diamond model and the nine-factor model enhance Porter's diamond model in terms of the source and context of competitiveness, they are not integrated into a single model. In order to analyze and explain national competitiveness more thoroughly, this article incorporates both of these extensions into an integrated model, i.e., the dual double diamond (DDD) model.

Figure 1 illustrates Porter's diamond model and its extensions. The horizontal axis shows the extension to the diamond model in terms of the sources of national competitiveness. The vertical axis, on the other hand, demonstrates the extension with regard to the scopes of national competitiveness. The sources (physical/human factors) and scopes (domestic/international contexts) interact with each other to determine a nation's competitiveness.
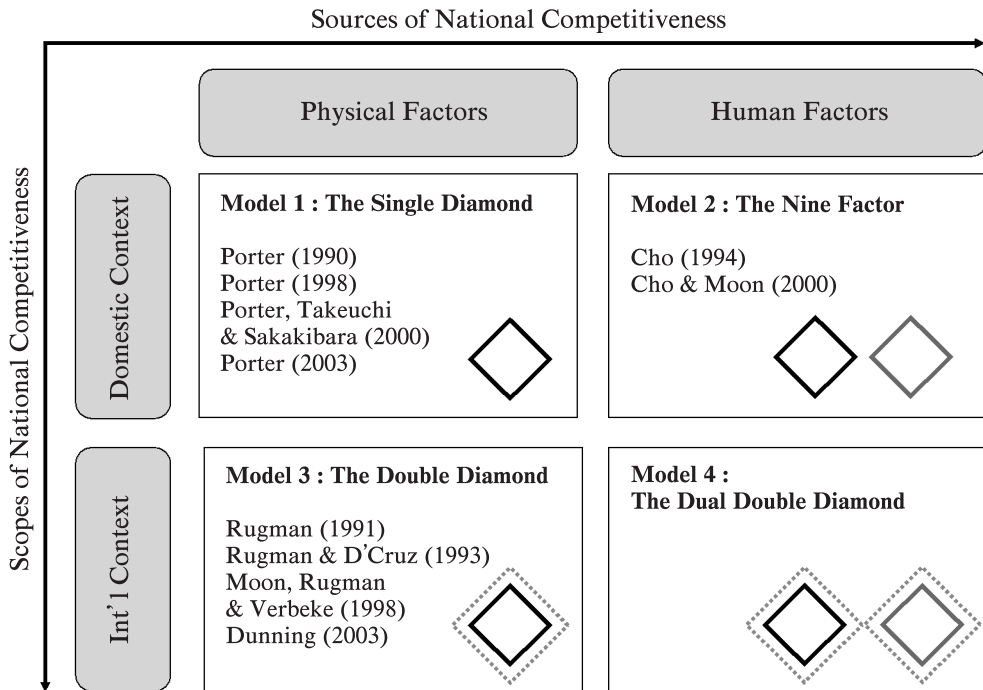
The two extensions double the original single diamond in two distinct ways. Model 2 in Figure 1 introduces a new diamond of human factors as an extension to sources of national competitiveness. On the other hand, Model 3 doubles its original diamond as an extension to scopes of national competitiveness, from a domestic context to an international context. Thus, the integration of these two extensions into a single framework results in a dual double diamond. At the lower right hand corner of Figure 1 is the DDD model, encompassing the previous extensions. The DDD model considers both physical and human factors in both domestic and international contexts, and consequently, provides a more comprehensive explanation for national competitiveness than other models.

The Cultural Model

Traditional Models in Explaining Cultural Differences

Cultural phenomena had been thought to be independent from other social fields for a long time. Scholars, however, have recently come forth with various cultural models on the cultural phenomena that influence diverse aspects of the society, recognizing that cultural differences affect national and business competitiveness. Although several models (Hofstede, 1983; Schein, 1992; Hall and Hall, 1990; Hampden-Turner and Trompenaars, 1997) have already been established to explain the fundamental differences in culture among nations, they

Fig. 1.   Extensions to the Diamond Model

Sources of National Competitiveness

Physical Factors

Human Factors

Scopes of National Competitiveness

Domestic Context

Model 1 : The Single Diamond

Porter (1990)
Porter (1998)
Porter, Takeuchi
& Sakakibara (2000)
Porter (2003)

Model 2 : The Nine Factor

Cho (1994)
Cho & Moon (2000)

Int'l Context

Model 3 : The Double Diamond

Rugman (1991)
Rugman & D'Cruz (1993)
Moon, Rugman
& Verbeke (1998)
Dunning (2003)

**Model 4 :
The Dual Double Diamond**

are not satisfactory and thus need to be revised.

Perlmutter (1969) first presented variables focusing on the primary attitudes among international executives, which consist of three variables — ethnocentricity (home-country orientation), polycentricity (host-country orientation), and geocentricity (world-orientation). Trompenaars and Hampden-Turner (1998), on the other hand, presented seven fundamental dimensions of culture — universalism vs. particularism; individualism vs. collectivism; neutral vs. affective; specific vs. diffuse; achievement vs. ascription; time (sequential vs. synchronous); and environment (internal vs. external control). These variables influence the way people live and work in different environments. Hall and Hall (1990) also introduced an interesting cultural model in which they defined culture in the contexts of time and space into three categories — high-low context; time orientation; and interpersonal space.

Hofstede (1997) suggested a more comprehensive cultural model with five dimensions. The first dimension, Individualism vs. Collectivism, refers to the relationship between the individual and others. The second dimension, Power Distance, focuses on the inequality that exists between people within a society. Uncertainty Avoidance, the third dimension, denotes the extent to which individuals within a culture feel threatened by uncertain or unknown events. The fourth dimension, Masculinity vs. Femininity, determines whether a society is assertive or modest through gender. The fifth dimension, which has been newly added to the original model, is Long-term Orientation vs. Short-term Orientation. A long-term (future) orientation embodies traits such as perseverance and thrift (saving), while a short-term (past

TABLE 2.   STUDIES ON CULTURAL MODELS AND THEIR VARIABLES

Perlmutter (1969)	Hall and Hall (1990)	Hofstede (1997)	Trompenaars and Hampden-Turner (1998)
Ethnocentrism Polycentrism Geocentrism	Context Time Space	Individualism vs. Collectivism Power Distance Uncertainty Avoidance Long-term Orientation vs. Short-term Orientation Masculinity vs. Femininity	Universalism vs. Particularism Individualism vs. Collectivism Neutral vs. Affective Specific vs. Diffuse Achievement vs. Ascription Time (Sequential vs. Synchronous) Environment (Internal vs. External Control)

and present) orientation involves respecting tradition and fulfilling social obligations. Table 2 describes the previous studies on culture and their variables.

Although Hofstede's model covers most of the cultural variables in the previous models (e.g., Hall and Hall, 1990; Trompenaars and Hampden-Turner, 1998), this model also has some problems. According to Moon and Choi (2001), Hofstede's model misses Perlmutter's (1969) EPG Profile. In addition, there are some overlapping and unsuitable dimensions in Hofstede's model. Moon and Choi (2001) thus argued that Hofstede's model needs to be restructured to yield a better measurement of cultural diversity, by adding a dimension corresponding to "openness," and fixing the overlap in Hofstede's five dimensions.

The OUI Model

Excluding *Masculinity vs. Femininity* and *Short-term vs. Long-term Orientation*, and incorporating *Power Distance* as an attribute of *Individualism*, the Hofstede model can be abridged into two dimensions: *Individualism* and *Uncertainty Avoidance*. In addition, a new dimension, *Openness,* needs to be added for a correct understanding of cultural differences. The *Openness* variable is particularly useful in understanding the changing competitiveness of East Asian countries. Because the new model has three variables, i.e., *Openness*, *Uncertainty Avoidance and Openness,* it is called the OUI model.

Each of these three variables is further classified into two sub-variables to allow for a more precise conceptualization and accurate measurement of culture. Individualism is measured by how much Reward is given with respect to Responsibility and vice versa. Uncertainty Avoidance is assessed by Disciplinism, which emphasizes rules, laws, and standards, and Frontierism, which accentuates challenge, originality, and investment. Openness consists of two elements: Aggressiveness and Attractiveness. Aggressiveness is the tendency to push home country values abroad, and Attractiveness is the willingness to accept foreign values and cultures. For further information, refer to Moon and Choi (2001).

Data and Methodology

Data

For the empirical analysis, data were selected from the *IPS National Competitiveness*

Table 3.   List of Criteria for the Calculation of National
Competitiveness Index

Main Factors	Sub-factors	Number of Criteria		
		Total	B.I.	Input
Physical Factors	Factor Conditions			
	Energy Resources	6	0	6
	Other Resources	17	8	9
	Business Context			
	Strategy & Structure	5	0	5
	Global Mindset	5	0	5
	Business Culture	7	0	7
	Foreign Investment	29	18	11
	Related & Supporting Industries			
	Transportation	10	1	9
	Communication	11	1	10
	Finance	23	0	23
	Education	10	1	9
	Science & Technology	9	2	7
	Cluster Development	3	0	3
	Overall Living Environment	16	1	15
	Demand Conditions			
	Demand Size	22	11	11
	Demand Quality	8	0	8
Human Factors	Workers			
	Quantity of Labor Force	10	4	6
	Quality of Labor Force	6	5	1
	Politicians & Bureaucrats			
	Politicians	11	0	11
	Bureaucrats	39	7	32
	Entrepreneurs			
	Personal Competence	6	0	6
	Social Context	5	0	5
	Professionals			
	Personal Competence	7	0	7
	Social Context	6	0	6

*B. I.: Background Information

Research (IPS, 2005), published by the Institute for Industrial Policy Studies. The report covers 66 countries and collects data for 275 criteria comprising physical and human factors in both domestic and international contexts. Table 3 shows the list of criteria in the report. The national competitiveness indices of Korea and Japan are calculated by eight factors comprising the DDD model. Factors are calculated as an average of 23 sub-factors, and sub-factors are also calculated as an average of the criteria under each sub-factor. Among the 275 criteria, 212 are selected to calculate the national competitiveness index. The unselected criteria are used for informative purposes.

For the OUI model, three proxy variables are chosen for each of the six cultural sub-variables. For *Individualism*, the sub-variables are *Responsibility* and *Reward*. The proxies for *Responsibility* are job description and individual roles, corporate governance, and the relationship between labor and management. Whether or not job description and individual roles are clear is critically important to define each person's responsibility. In the individualistic society, each individual is responsible for one's conduct for personal independence. In a corporate governance of well-defined responsibility, each employee and employer can be faithful to one's own duty by maintaining a cooperative relationship between labor and management. The proxies for *Reward* are reward system, firm's decision process, and professional's compensation. The system will inspire if reward is based on performance rather than

TABLE 4. CULTURAL VARIABLES

Cultural Variables	Sub-variables	Proxy Variables
Individualism	Responsibility	Job description and individual role Corporate governance The relationship between labor and management
	Reward	Reward system Firms' decision process Professional's compensation
Uncertainty Avoidance	Disciplinism	Public order Bureaucracy Bribery and corruption
	Frontierism	Innovation and creativity Entrepreneur's core competences Ability to seize opportunities
Openness	Aggressiveness	International changes Global standards New ideas
	Attractiveness	Equal treatment Professional job's openness The inward foreign investment promotion policy

seniority; if professionals are appropriately compensated; and if the firm's decision process is transparent.

As for *Uncertainty Avoidance*, *Disciplinism* and *Frontierism* are chosen as sub-variables. Specific elements of *Disciplinism* include public order, bureaucracy, and bribery and corruption. A society is highly disciplined when public order and bureaucracy are well maintained, and bribery and corruption are not common. Innovation and creativity, entrepreneur's core competences, and ability to seize opportunities are sub-variables for *Frontierism*. Traits that challenge undeveloped fields can be observed by whether innovativeness and creativity are highly appreciated in the society and whether entrepreneurs have differentiated core competences to take a big step forward.

Finally, *Aggressiveness* and *Attractiveness* are chosen as sub-variables of *Openness*. Three proxies for *Aggressiveness* are international changes, global standards, and new ideas. A firm's quick adaptation to the international changes and global standards, as well as accepting new ideas, are important factors for having or showing determination and energetic pursuit of business goals. Equal treatment, professional job's openness and the inward foreign investment promotion policy are proxies for *Attractiveness*. Whether foreign and domestic firms are equally treated, and whether professional jobs are open to foreigners are important criteria for encouraging the inflow of foreigners. Likewise, the policy of inward foreign investment promotion is an important element to measure the degree of openness of a country. The cultural variables, together with sub-variables and proxies, are summarized in Table 4.

Methodology

While productivity is the internal competence of an organization, competitiveness is an organization's relative competitive position compared to its competitors (Moon and Peery, 1995). Therefore, in order to find the fundamental relationship between Korea and Japan, we need to analyze the national competitiveness of the countries and to understand the relative

position of the countries from the viewpoint of each other. For this, cluster analysis is used to analyze the characteristics of objects with distance between them.

Cluster analysis is a statistical technique that classifies objects into clusters according to the characteristics of the objects. Objects in the same cluster share significant homogeneity, while there is significant heterogeneity among objects in different clusters (Hair *et al.,* 1998). In this study, we apply K-means clustering in non-hierarchical clustering techniques to the 23 sub-factor variables of 66 countries in the world and classify the countries into three categories of A, B, C in accordance with the competitiveness of the countries. We define the relationship between Korea and Japan as competitive in a certain sub-factor, if the result of cluster analysis shows that Korea and Japan are in the same category in the sub-factor. If not, they are in a cooperative relationship.

To perform a statistical test on the overall relationship between Korea and Japan using the results from the cluster analysis, we use the cross-tabulation analysis. The cross-tabulation analysis shows the overall relationship between the two countries by calculating the number of sub-factors in which the two countries are in a cooperative or competitive relationship, respectively.

Results

Competitiveness Perspective

Table 5 shows the results of the k-means cluster analysis of eight factors in both Physical Factors and Human Factors of the DDD model, with the competitive positions of Korea and Japan. Each country is classified into three competitiveness groups of A, B, and C, according to the results of K-means cluster analysis of 66 countries in the world. Cluster A is the group of countries with high competitiveness; Cluster B with middle competitiveness; and Cluster C with low competitiveness. In the 'K-means cluster analysis' column, data are arranged in the order of 'Cluster mean square', 'Error mean square', '*F*-Value', and 'Sig.'. Dotted lines in the 'Graph' column represent the results of cluster analyses of 66 countries in each factor. Korea and Japan show a cooperative relationship in Related and Supporting Industries, Politicians and Bureaucrats, and Entrepreneurs.

To analyze the relationship between the two countries in more detail, the same method is applied to the 23 sub-factors and the results are described in Table 6. The 'Graph' column and three statistical figures other than '*F*-values' are omitted because of space limitation. Although no conspicuous pattern is found, there are 10 sub-factors in which Korea and Japan are in a cooperative relationship. In the remaining 13 categories, two countries are in a competitive relationship.

Using the results of cluster analysis on 23 sub-factors, we conduct cross-tabulation analysis to find out the overall relationship between Korea and Japan. As cross-tabulation analysis is a statistical technique that assesses the relationships between nominal variables, it is useful to apply this technique to the analysis of the relationship between two countries with nominal variables (cooperation or competition) on 23 categories. If the results of the analysis show significant relationship, two countries are in a competitive relationship because the countries have similar distribution of 23 sub-factors.

Table 7 shows the results of cross-tabulation analysis. Results from both the Pearson

TABLE 5. CLUSTER ANALYSIS IN PHYSICAL AND HUMAN FACTORS

K-means Cluster Analysis	Graphs (Low — Competitiveness Rankings — High)		Rankings		Competitiveness Group		Relation-ship
			Korea	Japan	Korea	Japan	
FC — 2402.749 / 8.298 / 289.563 / 0.000			57	39	C	C	Comp.
BC — 7494.133 / 35.042 / 213.861 / 0.000			32	22	B	B	Comp.
R&S — 6668.287 / 21.118 / 315.762 / 0.000			22	14	B	A	Coop.
DC — 3697.231 / 12.638 / 292.556 / 0.000			18	1	A	A	Comp.
W — 1898.745 / 18.632 / 101.907 / 0.000			61	42	C	C	Comp.
P&B — 11837.238 / 56.616 / 209.081 / 0.000			32	19	B	A	Coop.
E — 9272.622 / 46.211 / 200.657 / 0.000			11	35	A	B	Coop.
P — 11832.199 / 41.536 / 284.870 / 0.000			17	15	A	A	Comp.

1) In 'K-means cluster analysis' column, data are arranged in the order of 'Cluster mean square', 'Error mean square', '*F*-Value', and 'Sig.'.

2) Dotted lines in 'Graph' column represent the results of cluster analyses of 66 countries in each factor.

3) K: Korea, J: Japan

TABLE 6.   CLUSTER ANALYSIS OF 23 SUB-FACTORS

Main Factors		Sub-Factors	*F*-Value	Rankings		Competitiveness Group		Relation-ship
				Korea	Japan	Korea	Japan	
Physical Factors	Factor Conditions	Energy Resources	248.313**	53	44	C	C	Comp.
		Other Resources	208.749**	49	26	C	C	Comp.
	Business Context	Strategy & Structure	182.267**	22	27	A	A	Comp.
		Global Mindset	239.171**	32	21	B	A	Coop.
		Business Culture	246.428**	34	18	B	A	Coop.
		Foreign Investment	171.729**	45	27	C	C	Comp.
	Related & Supporting Industries	Transportation	114.677**	22	4	B	B	Comp.
		Communication	323.684**	6	12	A	A	Comp.
		Finance	249.204**	23	6	B	A	Coop.
		Education	271.255**	41	38	B	B	Comp.
		Science & Technology	185.709**	13	1	A	A	Comp.
		Cluster Development	149.806**	43	30	B	B	Comp.
		Overall Living Environment	282.876**	29	28	B	B	Comp.
	Demand Conditions	Demand Size	142.592**	20	3	B	A	Coop.
		Demand Quality	196.425**	14	3	A	A	Comp.
Human Factors	Workers	Quantity of Labor Force	144.265**	42	55	B	C	Coop.
		Quality of Labor Force	168.769**	60	13	C	A	Coop.
	Politicians & Bureaucrats	Politicians	210.305**	40	21	C	B	Coop.
		Bureaucrats	190.818**	30	18	B	A	Coop.
	Entrepreneurs	Personal Competence	179.793**	8	31	A	B	Coop.
		Social Context	104.780**	21	52	A	B	Coop.
	Professionals	Personal Competence	115.145**	18	13	B	B	Comp.
		Social Context	233.812**	18	15	A	A	Comp.

** $p < 0.001$

TABLE 7.   RESULTS OF CHI-SQUARE TESTS

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.26	4	0.06
Likelihood Ratio	8.67	4	0.07
Number of Valid Cases	23	•	•

Chi-Square test and the Likelihood Ratio test yield a significance level of greater than 0.05, which does not allow us to reject the null hypothesis. Thus, we conclude that Korea and Japan are not in a competitive relationship, although there are more competitive than cooperative cases as shown in Table 6.

Summarizing the analysis of Korea and Japan in a competitiveness perspective, we can find neither a competitive nor cooperative relationship. However, the following analysis from a cultural perspective suggests how the two countries can cooperate to enhance their competitiveness.

Cultural Perspective

The OUI indices of Korea and Japan are calculated as shown in Table 8, using proxies listed in Table 4. In Openness, Japan shows a higher index than Korea. In sub-variables of

TABLE 8.   NATIONAL COMPETITIVENESS INDICES OF THE OUI MODEL

Country	Main Factors	Sub Factors	
	Openness	Aggressiveness	Attractiveness
Korea	56.56	59.89	53.22
Japan	61.50	48.94	74.06
	Uncertainty Avoidance	Frontierism	Disciplinism
Korea	67.15	80.29	54.01
Japan	59.48	51.79	67.17
	Individualism	Responsibility	Reward
Korea	55.50	38.62	72.39
Japan	64.80	63.88	65.72

TABLE 9.   CLUSTER ANALYSIS OF CULTURAL VARIABLES

Main Factors	Sub-Factors	Competitiveness Group				Relationship
		Sub-Factors		Main Factors		
		Korea	Japan	Korea	Japan	
Openness	Aggressiveness	B	B	BB	BA	Complementary
	Attractiveness	B	A			
Uncertainty Avoidance	Frontierism	A	B	AB	BA	Complementary
	Disciplinism	B	A			
Individualism	Reward	A	B	AC	BB	Complementary
	Responsibility	C	B			

Openness, Korea is higher in Aggressiveness, while Japan is higher in Attractiveness. On the other hand, Korea is higher than Japan in Uncertainty Avoidance because Korea is much stronger in Frontierism, while Japan is better in Disciplinism. In Individualism, the index of Japan is higher than that of Korea because Japan scores very high in Responsibility compared to Korea.

The same method applied to the cluster analysis in the competitiveness perspective is employed in the cultural analysis. The variables in the cluster analysis are classified into three groups of A, B and C, respectively, using the OUI indices of 66 countries in the world. The results are described in Table 9. The competitiveness groups of each variable in OUI are calculated by concatenating the competitiveness groups of sub-factors. For example, in Uncertainty Avoidance, Korea is in group A in Frontierism and in group B in Disciplinism, while Japan is in group B in Frontierism and in group A in Disciplinism. As the competitiveness groups in Uncertainty Avoidance are calculated by concatenating the competitiveness groups in Frontierism and Disciplinism, the competitiveness group of Korea in Uncertainty Avoidance is AB, while that of Japan is BA.

By comparing the competitiveness groups, we can figure out the relationship between Korea and Japan in a cultural perspective. As described in the main factors column of the competitiveness group in Table 9, not a single group in all three OUI variables between Korea and Japan is the same. Therefore, Korea and Japan are in culturally complementary positions. In other words, Korea and Japan can work together by providing the cultural aspects the other lacks.

Conclusion

This article considered both competitiveness and cultural perspectives to suggest ways in which Korea and Japan can cooperate with each other. This kind of analysis is difficult and blurred when only a competitiveness perspective is considered. In a competitiveness analysis, Japan is stronger than Korea in Related and Supporting Industries, while Korea performs better in Entrepreneurs than Japan. On the other hand, in a cultural perspective, Korea is better in Frontierism, while Japan is stronger in Disciplinism.

On the basis of these analyses, Korea and Japan can work together. Japan may help Korea with its high technologies in such areas as R&D, which is an important Related and Supporting sector, and Korea can enhance the entrepreneurship of Japan with its strong Frontierism, which is an element of Entrepreneurs. Considering this kind of cooperation, the relationship between Korea and Japan is not one-way traffic, such as technology transfer or leakage from Japan to Korea, but mutually beneficial interactions.

Previous studies on the relationship between Korea and Japan have focused on the limited number of factors comprising national competitiveness, thus inevitably resulting in biased analyses, compared to the analysis with the diamond model. This article applies the dual double diamond model to the analysis of national competitiveness and the OUI model to understand the cultural characteristics. Contrary to what has been widely understood, there is no clear evidence that Korea and Japan are in an economically competitive relationship. In addition, the two countries can establish a cooperative system by complementing cultural differences, which would bring significant benefits to both countries.

This article employs the cluster analysis technique in which the variables comprising national competitiveness and cultural characteristics are grouped into 3 clusters. Further classification of each cluster would result in a more accurate analysis of the relationship between Korea and Japan, which may be a good topic for further studies. The two countries can also cooperate in the fields where they are competing with each other. Two conditions can be suggested for this possibility. One is when there exist very large economies of scale which cannot be fully exploited by one party. The other is when a significant level of absorptive technological capabilities for learning, thereby a certain level of competitive position, is needed for an efficient cooperation. While these are interesting topics for future studies, these cases will also support cooperative rather than competitive nature of business between the two countries.

SEOUL NATIONAL UNIVERSITY AND THE INSTITUTE FOR INDUSTRIAL POLICY STUDIES

REFERENCES

Cheong, I. K. (2004), *2003 Studies on a China-Japan-Korea FTA*, Seoul: KIEP. (In Korean)

Cho, D. S. (1994), "A Dynamic Approach to International Competitiveness: The Case of Korea", *Journal of Far Eastern Business*, 1(1): 17-36.

Cho, D. S. and Moon, H. C. (2000), *From Adam Smith to Michael Porter,* Singapore: World Scientific.

Dunning, J. H. (2003), "The Role of Foreign Direct Investment in Upgrading China's Competitiveness", *Journal of International Business and Economy,* 4(1), 1-13.

Hair, J. F., Anderson, R. E., Tatham, R. L and Black, W. C. (1998), *Multivariate Data Analysis* (5th edition), Upper Saddle River, N.J.: Prentice Hall.

Hall, E. T. and Hall, M. R. (1990), *Understanding Cultural Differences: Germans, French, and Americans*. Yarmough, Maine: Intercultural Press, Inc.

Hampden-Turner, C. and Trompenaars, F. (1997), "Response to Geert Hofstede", *International Journal of Intercultural Relations,* 21(1): 149-159.

Hofstede, G. (1983), "The Cultural Relativity of Organizational Practices and Theories," *Journal of International Business Studies,* 14(2): 75-89.

Hofstede, G. (1997), *Cultures and Organizations: Software of the Mind,* New York: McGraw-Hill.

IPS (2005), *IPS National Competitiveness Research 2005 Report*, Seoul: IPS and IPS-NaC.

Koh, I. D., Lee, J. H., Cho, B. K. (2003), *Trade Pattern among East Asian Countries and its Implication for Korea-China-Japan Trade*, Seoul: KDI. (In Korean)

Lee, H. B. and Okamoto N. (2002), *Analysis of Industrial Interdependency among Japan, China, and Korea: Application of International Input-Output Table*, Seoul: KIEP. (In Korean)

Lee, J. C. (2004), *Current Status and Future Direction of Economic Cooperation between China, Japan and Korea: Related to a Possible CJK FTA*, Seoul: KIEP. (In Korean)

Moon, H. C. and Peery, N. S. (1995), "Competitiveness of Product, Firm, Industry, and Nation in a Global Business", *Competitiveness Review*, 5(1): 37-43.

Moon, H. C., Rugman, A. M. and Verbeke, A. (1998), "A Generalized Double Diamond Approach to the Global Competitiveness of Korea and Singapore", *International Business Review*, 7: 135-150.

Moon, H. C. and Choi, E. K. (2001), Cultural Impact on National Competitiveness, *Journal of International and Area Studies*, 8(2): 21-36.

Perlmutter, H. V. (1969), "The Tortuous Evolution of the Multinational Corporation," *Columbia Journal of World Business,* (4): 9-18.

Porter, M. E. (1990), *The Competitive Advantage of Nations*, New York: Free Press.

Porter, M. E. (1998), "Clusters and the New Economics of Competition", *Harvard Business Review*, 76(6): 77-90.

Porter, M. E. (2003), *Malaysia's Competitiveness: Moving to the Next Stage*, Kuala Lumpur, Malaysia (Presentation slides).

Porter, M. E., Takeuchi, H. and Sakakibara, M. (2000), *Can Japan compete?,* Cambridge, Massachusetts: Perseus Publishing.

Rugman, A. M. and D'Cruz, J. R. (1993), "The Double Diamond Model of International Competitiveness: The Canadian Experience", *Management International Review,* 33: 17-39.

Rugman, A. M. (1991), "Diamond in the Rough", *Business Quarterly,* 55(3): 61-64.

Schein, E. H. (1992), Organizational Culture and Leadership. San Francisco: Jossey-Bass Publishers.

Smith, A. (1776) (1937), "An Inquiry into the Nature and Causes of the Wealth of Nations", in Charles W.E. (Eds.), *The Harvard Classics*, New York: P.F. Collier & Son Corporation.

Trompenaars, Fon and Hampden-Turner, C. (1998), *Riding The Waves of Culture: Understanding Cultural Diversity in Global Business,* New York: McGraw-Hill.