



National Competitiveness: Implications for Different Groups and Strategies

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Abstract

Several reports on national competitiveness already exists, but they are not satisfactory. This paper corrects the problems of the existing reports and suggests new methodologies of explaining national competitiveness. When comparing national competitiveness, nations should be grouped with regard to similarities in terms of economic scale and structure. For this purpose, this paper introduces 3x3 typology of country groups in terms of the nation's size and competitiveness. In addition, this paper applies the classical generic strategies to the national level. Combining these two analytical frameworks, this paper demonstrates several useful policy implications for different levels of national competitiveness.

Keywords: National Competitiveness, Country Groups, Generic Strategies

Introduction

Michael Porter developed a comprehensive approach to national competitiveness, the so-called diamond model, in his book entitled *the Competitive Advantage of Nations* (Porter, 1990). As its title suggests, the book may be meant to replace *the Wealth of Nations* (Smith, 1776). Porter's diamond model was extended in two directions. One was the incorporation of the multinational activities through the introduction of the double diamond model (Rugman 1991 Moon, Rugman and Verbeke 1998, Dunning 2003). The other was the addition of the role of human factors through the proposition of the nine-factor model (Cho 1994). This study applies the nine-factor model to countries and also incorporates multinational activities, as suggested by the generalized double diamond model.

Several reports on national competitiveness already exists, but they are not satisfactory enough. Policy makers are often sensitive to the results of reports of this kind and can be misled to pursue undesirable policies. In particular, rankings are misleading if they are not based on a rigorous model and an appropriate methodology. For discussions about these issues, refer to Cho and Moon (2000). In this study, we have corrected theoretical and methodological problems in the existing reports. We hope that policy makers and businesses will find useful

implications from this research.

Critical Review of the Existing Reports

The two most popular institutions publishing national competitiveness reports are the International Institute for Management Development (IMD) and the World Economic Forum (WEF). The IMD published reports since 1989, but was separated into the IMD and the WEF in 1995. The two institutes have published separate reports since 1996. Their reports sometimes trigger responses and make big headlines in some countries. However, a careful examination of these two reports reveals some significant problems.

Theory

The two reports have different views on the definition of competitiveness and their models have been evolving over years. The IMD first defines competitiveness as "the ability of a country to create added value and thus increase national wealth" (IMD, 1996, p. 42). This definition 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 (IMD, 1996, p. 42). In contrast, the WEF accepts GDP and/or productivity as proxies for

competitiveness by defining competitiveness as “the ability of a national economy to achieve sustained high rates of economic growth, as measured by the annual change in gross domestic product per person” (WEF, 1996, p. 19).

While their definitions of competitiveness are different, both institutes have chosen almost identical factors of competitiveness. First of all, the IMD has chosen two factors, domestic economy and internationalization and then added six others – government, management, finance, infrastructure, science and 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: domestic economy becomes civil institutions and internationalization becomes openness, while the other six factors remain the same. The factors of competitiveness in these two reports are compared in Table 1.

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 |

These reports do not have any strong theoretical background. Without a rigorous theoretical explanation, it is not clear why some factors are important and others are not. Due to their lack of a rigorous theory, these reports frequently change their models. The IMD newly added location attractiveness to its original model in 1999 and introduced a completely new model in 2001. Instead of its original eight variables, this new model consists of four variables – economic performance, government efficiency, business efficiency and infrastructure. However, a careful researcher will immediately find this model not as rigorous as Porter’s Diamond. A similar problem is found in the WEF’s new model, as shown in Table 2.

Without a rigorous theoretical explanation, it is not clear why some factors are important and others are not.

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 | |

Methodology

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. This was mainly due to the fact that they applied different weights to the same variables. Any weightage scheme can be arbitrary to some extent, but if a model is weighted in an arbitrary manner, it might produce entirely misleading results.

The IMD report contained both hard data, that is, statistical indicators published by organizations and soft data, that is, survey results compiled from executives. Because soft data could be volatile, the hard data accounted for two-thirds of the entire data employed by the IMD. In other words, the survey results accounted for one-third of the overall competitiveness scoreboard (IMD, 2000, p. 55). On the other hand, the WEF applied different weights to different factor indices (WEF, 1999, p. 98). This means that the factor indices are given the following weights, thus creating the overall competitiveness index (note the weights sum to 1.0): openness, 1/6; government, 1/6; finance, 1/6; infrastructure, 1/9; technology, 1/9; management, 1/18; labor, 1/6; and institutions, 1/18.

After recognizing some problems of their weighting schemes in 2000, both the IMD and the WEF frequently change the weights of variables as well as their models. In 2003 the IMD classified countries into two groups in terms of population size, that is, more or less than 20 million people, while keeping the weights the same as before, which is, two-thirds for hard data and one-third for soft data. On the other hand, in 2002 (2001-2002 Report) the WEF classified countries in terms of the number of patents



granted in the U.S. The core group country has patents of 15 or more per one million people and the non-core group country has patents of less than 15. Weights are different. The core group weights are: technology 1/2, public institution 1/4 and macroeconomic environment 1/4, while the non-core group weights are: technology 1/3, public institution 1/3 and macroeconomic environment 1/3.

There may also be a problem with the subjectivity of opinions. For example, the IMD (1996, p. 44) sent questionnaires to approximately 21,000 executives, but only 15 per cent were returned. Although the sample size was large, there is a significant non-response bias. Moreover, the consistency and reliability of the data used can also be called into question. Both the IMD and the WEF have a global network of partner institutes that greatly vary in nature, ranging from universities to private or public organizations. Such diversity makes it quite difficult to maintain consistency in data collection. In order to make the survey results consistent and reliable, the survey should be conducted either by one single organization or by a group of organizations similar to one another in nature.

A nation's competitiveness is sometimes more meaningful among the nations endowed with similar comparative advantages competing in similar industries.

Policy Implications

Both the IMD and the WEF reports rank each nation according to its overall national competitiveness. However, this method is not very useful to give implications for countries with different characteristics. For example, in the WEF Report 2003, Finland is on the top of the list and the Philippines is listed at 66th. What can be learned from this? How would this help the Philippines improve its policy? Does this mean that the country has to invest large amounts of money and effort in developing technology, hoping that someday it might catch up to Finland? The Philippines should be compared and contrasted with other similar countries such as Thailand and Indonesia, rather than Finland.

The existing reports are mainly designed for developed countries. For example, the IMD argues that knowledge is perhaps the most critical competitiveness factor (IMD, 2000, p. 47). However, the sources of competitiveness vary among nations as they have different factor endowments and characteristics. These may be natural resources, cheap labor, strong government support, technology or other factors, depending on the situation. We need different criteria for different countries if they are in different stages of economic development.

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meaningful among the nations endowed with similar comparative advantages competing in similar industries. For example, it may be less meaningful to say that Korea is in general less competitive than the U.S. because these two countries have different comparative advantages. In contrast, it is more meaningful to say that Korea is more (or less) competitive than Taiwan, because these two countries are very similar in terms of comparative advantages and areas of competition in the international market. Therefore, in order to derive meaningful policy implications, we need to consider rankings in groups of similar nations (Group Ranking), as well as overall rankings for all countries in the world (World Ranking).

Based on the principles of theory, methodology and policy implications mentioned above, this report introduces a new national competitiveness study, containing rankings among similar nations as well as overall rankings.

The IPS Report

In order to solve the problems of existing reports, this report is designed as follows:

Theory

Although there has been an evolution in trade theories in recent times, the original trade theorists argue that national competitiveness is a function of capital, labor, or natural resources (Figure 1). However, many developed countries (for example, Western European countries and Japan) have prospered without abundant natural resources and many resource-rich countries (for example, Russia, China, Indonesia and many Latin American countries) are not as much developed. On a similar note, developed countries usually have expensive labor while less developed

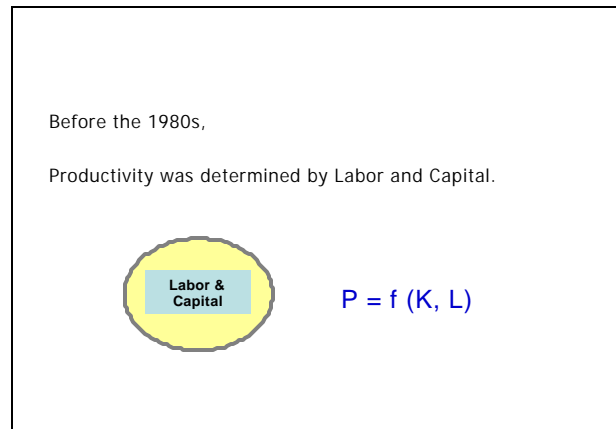


Figure 1: Traditional Theory

countries have cheap labor. Thus, it is fair to say that the reality is not what the traditional theorists have predicted.

As Porter (1990) pointed out, the traditional model, whose origins date back to Adam Smith and David Ricardo and that is embedded in classical economics, is at best incomplete and at worst incorrect. Other economists see national competitiveness as a macroeconomic or financial phenomenon. They suggest that cheap currency and balanced budgets enhance competitiveness. However, there are many cases where nations have prospered despite appreciating currencies and budget deficits. Here comes the need for a new national competitiveness model.

Competitiveness is in fact a very mysterious term. There was an interesting debate about competitiveness between Paul Krugman and other economists (Krugman 1994). According to Krugman, competitiveness poses three dangers. First, it could result in a waste of money on enhancing national competitiveness. Second, it could trigger protectionism and trade wars. Finally, it could result in bad public policy. By pointing out the three dangers, Krugman warned that an obsession with competitiveness could be dangerous. Despite all these dangers, we need to develop a theory to explain what competitiveness is, because it is very important.

There are two prerequisites for a good competitiveness theory. One is that the theory should be comprehensive enough to capture more than one variable, such as natural resources or labor, to explain the ever-increasing complexity of the real world. The other is that the theory should be dynamic enough to explain the changing nature of national

competitiveness, which cannot be well explained by the classical theories such as absolute advantage and comparative advantage principles. Porter's Diamond model has met both of these two conditions. The model consists of four comprehensive variables—factor conditions, demand conditions, related and supporting industries and business context (Figure 2). In addition, Porter demonstrates that the Diamond model is dynamic by arguing that national prosperity is created, not inherited. This implies that national competitiveness does not grow out of resource endowments or currency value, as traditional models suggest, but that it can be created by a combination of strategic choices along the four determinants of the Diamond model.

However, Porter is not free from criticism. The single Diamond is not so relevant in small economies because their domestic variables are very limited (Rugman 1991). The principle of the Diamond itself may hold good – but its geographical constituency has to be established on very different criteria (Dunning 1993). To solve this problem, the “Generalized Double Diamond model” has been proposed (Moon, Rugman and Verbeke 1998). On the other hand, Cho (1994) proposed an extended diamond model by incorporating the role of human factors. A related literature is well documented elsewhere (Cho and Moon

2000). Our current study is primarily based on Cho's nine-factor model, with an integration of comprehensive multinational activities (Moon, Rugman and Verbeke 1998).

The Nine-Factor model is more comprehensive and more dynamic than Porter's original

diamond model. First, this framework includes four groups of human factors in addition to the four physical factors of the original Diamond model in explaining a nation's competitiveness. Therefore, it is more comprehensive in explaining different types of nations, in particular, where the roles of different groups of people are important for their economic development. Second, it is more dynamic. The human factors and physical factors interact in order to spur a nation's development. This model embodies Porter's notion that “national prosperity is created, not inherited.” In some ways, it does more so than Porter's Diamond in that people are the major spur behind obtaining national competitiveness by arranging and combining the physical factors in a productive way. In addition, government officials are endogenous factors in this new model and thus have direct influence on national competitiveness, while the government factor is an outside variable in Porter's original model.

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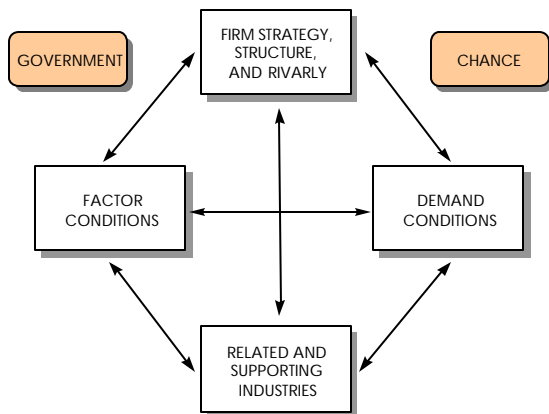


Figure 2: The Diamond Model



Human factors include workers, politicians and bureaucrats, entrepreneurs and professionals (including scientists and managers). Physical factors include factor conditions, demand conditions, related and supporting industries and business context. Chance event, an external factor, is added to these eight internal factors to make a new paradigm. The Nine-Factor model is shown in Figure 3.

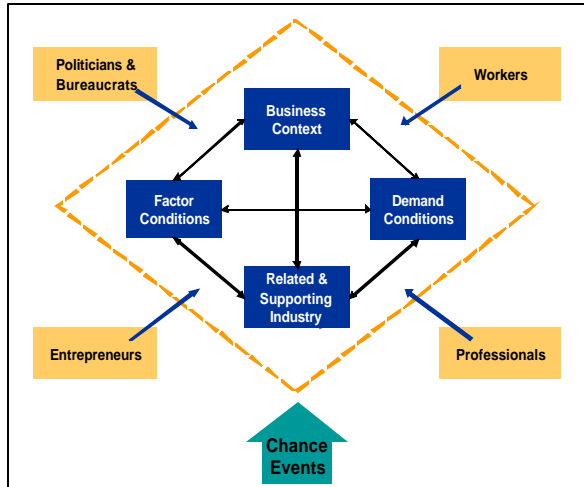


Figure 3: The Nine-Factor Model

Methodology

After selecting variables and their proxies, the most up-to-date hard data were collected through various statistical sources published by international and government organizations. In addition, soft data were collected by our partner institution, the Korea Trade-Investment Promotion Agency (KOTRA), which holds 98 offices abroad. KOTRA officials compiled the data from people familiar with the local economy. As the survey was conducted by one single organization, the data collected were very consistent. In addition, the surveys were conducted within a short period to minimize any bias due to the time gap. The survey is generally conducted during the first three weeks of February.

We have classified countries in terms of size and competitiveness. For size, countries are grouped into large, medium and small by their population and land size. For competitiveness, countries are classified as strong, intermediary and weak by a composite index of eight variables. Figure 4 illustrates a 3x3 matrix of country groups and Table 4 shows countries for each of the nine groups. (Also see Table 3 for ANOVA test.) By considering size and competitive structure simultaneously, we can now more realistically compare and contrast the relative positions of countries.

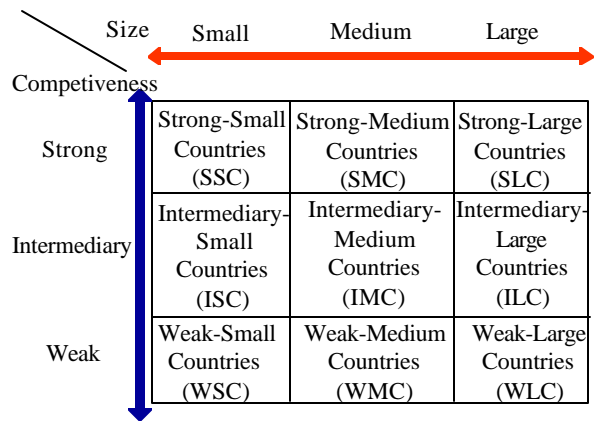


Figure 4: Typology of Country Groups

Table 3: ANOVA for Grouping Countries

| | Cluster | | Error | | F | Sig. |
|------------------------|-------------|----|-------------|----|----------|------|
| | Mean Square | df | Mean Square | df | | |
| Population & Land area | 2200.206 | 11 | .581 | 54 | 3789.863 | .000 |

| | Cluster | | Error | | F | Sig. |
|--------------------------------------|-------------|----|-------------|----|---------|------|
| | Mean Square | df | Mean Square | df | | |
| National Competitiveness Index (NCI) | 5092.775 | 2 | 22.251 | 65 | 228.883 | .000 |

Weights and Competitive Strategy

Classical distinction of two generic strategies (Porter 1980, 1996) at the corporate level, *cost and differentiation*, is applied to the national level in this study (Porter, Takeuchi and Sakakibara 2000). The competitive advantage of a cost strategy is “low cost and high efficiency,” utilizing mainly cheap factor conditions and workers. By contrast, a differentiation strategy refers to “high cost but high value added and focuses more on professionals and market conditions. The differences are illustrated in Figure 5.

In order to find out different competitive positions for different strategies, we have given different weights to the competitiveness variables for different strategies, as shown in Table 5 and Table 6. For cost strategy, equal weights (50 per cent) are given to physical and human factors. However, the variables and sub-variables have different weights, as mentioned above, with more weights on factor conditions and workers. For differentiation strategy, equal weights (50 per cent) are given to physical and human factors but the opposite weights are given to the variables and sub-variables.

Table 4: Country Groups

| Small Group | | Country (21) | Medium Group | | Country (23) | Large Group | | Country (24) | | | |
|-------------|-------------|--------------|--------------|--------------|--------------------|-------------|--------|---------------|-------|--------------|--------|
| Small | Strong | Austria | Medium | Strong | Finland | Large | Strong | Australia | | | |
| | | Belgium | | | France | | | Canada | | | |
| | | Denmark | | | New Zealand | | | Germany | | | |
| | | Hong Kong | | | Norway | | | Japan | | | |
| | | Ireland | | | Sweden | | | United States | | | |
| | | Netherlands | | | Taiwan | | | | | | |
| | | Singapore | | | United Kingdom | | | | | | |
| | | Switzerland | | | | | | | | | |
| | | Intermediary | | | Czech Republic | | | Intermediary | Chile | Intermediary | Brazil |
| | | | | | Dominican Republic | | | | Italy | | China |
| Greece | Korea | | Colombia | | | | | | | | |
| Hungary | Malaysia | | India | | | | | | | | |
| Israel | Philippines | | Mexico | | | | | | | | |
| Kuwait | Poland | | Russia | | | | | | | | |
| Panama | Spain | | Saudi Arabia | | | | | | | | |
| Portugal | Thailand | | | | | | | | | | |
| Ukraine | | | | | | | | | | | |
| Weak | Croatia | | Weak | Cambodia | Weak | Argentina | | | | | |
| | Guatemala | Kenya | | Bangladesh | | | | | | | |
| | Jordan | Morocco | | Egypt | | | | | | | |
| | Uruguay | Oman | | Indonesia | | | | | | | |
| | | Romania | | Iran | | | | | | | |
| | | Sri Lanka | | Libya | | | | | | | |
| | | UAE | | Nigeria | | | | | | | |
| | | Venezuela | | Pakistan | | | | | | | |
| | | | | Peru | | | | | | | |
| | | | | South Africa | | | | | | | |
| | | Turkey | | | | | | | | | |
| | | Vietnam | | | | | | | | | |

Competitive Strategy

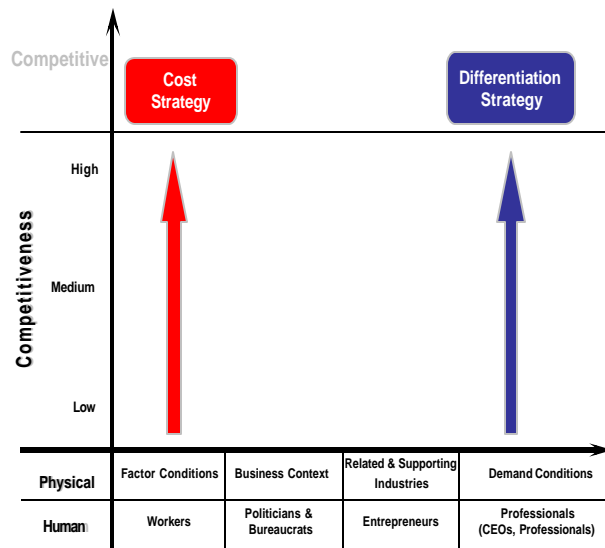


Figure 5: Competitive Strategy

We can derive very important implications from this analysis. For example, Japan’s standard index is 52.73 (19th place). The standard index is the unweighted average of indices of all sub-variables of competitiveness. However, if Japan pursues the cost strategy, its index becomes 39.00 and the ranking also falls to 40th place, as shown in Table 7. By contrast, if Japan pursues the differentiation strategy, the country will have an index of 69.20 with the ranking of second. On the other hand, China is the opposite case.

China’s standard index of 43.41 (32nd place) will go up to 48.85 (24th place) with the cost strategy but will go down to 39.82 (39th place) with the differentiation strategy. Therefore, countries have to pursue appropriate strategies to maximize their competitiveness.

More general pictures can be illustrated. For large-size countries, as shown in Figure 6, the US is competitive both with the cost strategy (2nd place) and the differentiation strategy (1st place). Australia and Japan are more competitive with the differentiation strategy, while the cost strategy is more appropriate for China, India and Pakistan. For Bangladesh and Libya, neither the cost nor the differentiation strategy works out. A significant breakthrough is needed for these countries to enhance their competitiveness.

However, it should be noted that the implication of this analysis is for the most representative or average firm of the country. Although we argued that cost strategy is more appropriate for China, India and Pakistan, for example, it does not mean that every firm from these countries should pursue cost strategy. In addition, the grouping of countries in Table 4 does not necessarily mean that countries compete only within sub-group. Instead, the grouping scheme provides useful guidelines for a country to find direct competitors and to formulate effective policies.



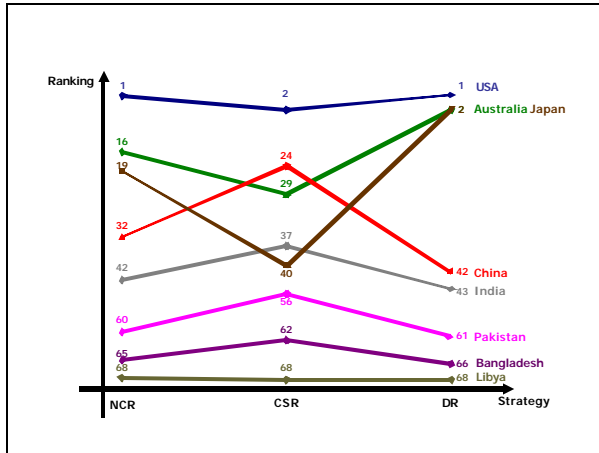


Figure 6: Changing Competitiveness of Large Size Countries

For medium-size countries in Figure 7, most of the countries should pursue differentiation strategies to enhance their competitiveness. However, Sri Lanka and Cambodia are “competitiveness-failed” countries. Like Bangladesh and Libya in the group of large-size countries, these countries need more radical policies to gain their competitiveness. Otherwise, these countries will remain as underdeveloped. For small-size countries in Figure 8, all of the countries are a lot more competitive with the differentiation strategy with differing degrees. This gives us another important implication that small-size countries can enhance their competitiveness with the differentiation strategy, although they do not have abundant resources and cheap labor.

Redefining Competitiveness

Competitiveness and relevant strategies should be understood and designed at various levels ranging from product, firm, industry, to nation. The most popular definition of competitiveness at the national level can be found in the Report of the President’s Commission on Competitiveness, written for the Reagan administration in 1984:

A nation’s competitiveness is the degree to which it can, under free and fair market conditions, produce goods and services that meet the test of international markets while simultaneously expanding the real incomes of its citizens. Competitiveness at the national level is based on superior productivity performance.

Some scholars have similar views to this. For example, Porter (1990, p. 6) said that the only meaningful concept of competitiveness at the national level is national productivity. Krugman (1994, p. 32) stated that competitiveness would turn out to be a funny way of saying productivity and would have nothing to do with international competition. However, competitiveness and productivity are conceptually different. A nation can sometimes enhance its competitiveness by changing strategies (for example, protectionism or currency devaluation), without any increase in productivity. Productivity refers to the internal capability of an organization, while competitiveness refers to the relative position of an organization against its competitors. These two important concepts are often confused and used interchangeably. The relative competitive position in the international market, not just the absolute amount of productivity, is a critical element for a nation’s competitiveness.

Another important point in defining a nation’s competitiveness is that it is more meaningful to compare nations with similar comparative advantages competing in similar industries (Cho and Moon, 1998). Therefore, a

Table 5: Weights for Cost Strategy

| Main Factor | weight | Sub-factor | weight |
|----------------------------|---------------------------------|-------------------------|--------|
| Physical Factor | Factor Conditions | Energy resources | 1/2 |
| | | Other resources | 1/2 |
| | Business Context | Strategy & Structure | 1/4 |
| | | Global Mindset | 1/4 |
| | | Business Culture | 1/4 |
| | | Foreign Investment | 1/4 |
| | Related & Supporting Industries | Transportation | 1/6 |
| | | Communication | 1/6 |
| | | Finance | 1/6 |
| | | Education | 1/6 |
| Science & Technology | | 1/6 | |
| Overall Living Environment | | 1/6 | |
| Demand Conditions | Demand quantity | 3/4 | |
| | Demand quality | 1/4 | |
| Human Factor | Workers | Quantity of Labor force | 3/4 |
| | | Quality of Labor force | 1/4 |
| | Politicians & Bureaucrats | Politicians | 3/4 |
| | | Bureaucrats | 1/4 |
| | Entrepreneurs | Personal Competence | 3/4 |
| | | Social Context | 1/4 |
| Professionals | Personal Competence | 3/4 | |
| | Social Context | 1/4 | |

Table 6: Weights for Differentiation Strategy

| Main Factor | weight | Sub-factor | weight |
|----------------------------|---------------------------------|-------------------------|--------|
| Physical Factor | Factor Conditions | Energy resources | 1/2 |
| | | Other resources | 1/2 |
| | Business Context | Strategy & Structure | 1/4 |
| | | Global Mindset | 1/4 |
| | | Business Culture | 1/4 |
| | | Foreign Investment | 1/4 |
| | Related & Supporting Industries | Transportation | 1/6 |
| | | Communication | 1/6 |
| | | Finance | 1/6 |
| | | Education | 1/6 |
| Science & Technology | | 1/6 | |
| Overall Living Environment | | 1/6 | |
| Demand Conditions | Demand quantity | 3/4 | |
| | Demand quality | 1/4 | |
| Human Factor | Workers | Quantity of Labor force | 3/4 |
| | | Quality of Labor force | 1/4 |
| | P&B | Politicians | 3/4 |
| | | Bureaucrats | 1/4 |
| | Entrepreneurs | Personal Competence | 3/4 |
| | | Social context | 1/4 |
| Professionals | Personal Competence | 3/4 | |
| | Social context | 1/4 | |

Table 7: Changing Competitiveness with Different Strategies

| Country | NCR* | CSR* | DSR* | NCI* | CSI* | DSI* |
|---------------|------|------|------|-------|-------|-------|
| United States | 1 | 2 | 1 | 73.88 | 63.24 | 85.15 |
| Sweden | 2 | 26 | 1 | 63.84 | 48.33 | 77.37 |
| Canada | 3 | 20 | 2 | 62.48 | 51.03 | 72.71 |
| UK | 4 | 21 | 1 | 62.02 | 50.27 | 73.30 |
| Singapore | 5 | 28 | 2 | 61.46 | 47.57 | 72.30 |
| Finland | 6 | 28 | 2 | 61.32 | 47.13 | 73.77 |
| Hong Kong | 7 | 29 | 2 | 61.23 | 45.84 | 72.2 |
| Belgium | 8 | 31 | 1 | 60.36 | 44.49 | 74.9 |
| Ireland | 9 | 29 | 2 | 59.94 | 45.05 | 72.38 |
| Switzerland | 10 | 32 | 1 | 59.91 | 43.37 | 74.33 |
| Netherlands | 11 | 29 | 2 | 59.61 | 45.85 | 70.30 |
| Denmark | 12 | 30 | 2 | 59.13 | 44.62 | 72.66 |
| Austria | 13 | 31 | 2 | 58.27 | 44.03 | 73.5 |
| Norway | 14 | 23 | 2 | 57.44 | 48.95 | 69.30 |
| New Zealand | 15 | 29 | 2 | 56.87 | 45.10 | 65.33 |
| Australia | 16 | 29 | 2 | 56.29 | 46.84 | 66.31 |
| Germany | 17 | 37 | 2 | 54.39 | 40.69 | 68.23 |
| France | 18 | 39 | 2 | 53.73 | 39.96 | 68.72 |
| Japan | 19 | 40 | 2 | 52.73 | 39.00 | 69.20 |
| Taiwan | 20 | 36 | 4 | 52.01 | 41.25 | 62.08 |
| Spain | 21 | 40 | 5 | 50.30 | 38.96 | 61.51 |
| Israel | 22 | 43 | 3 | 50.14 | 37.86 | 63.51 |
| Italy | 23 | 43 | 3 | 49.43 | 38.23 | 62.97 |
| Portugal | 24 | 40 | 13 | 48.56 | 33.54 | 59.09 |
| Korea | 25 | 43 | 5 | 48.50 | 39.11 | 61.69 |
| Chile | 26 | 36 | 15 | 48.50 | 41.28 | 57.33 |
| Hungary | 27 | 37 | 17 | 47.87 | 41.37 | 55.14 |
| Malaysia | 28 | 39 | 16 | 47.65 | 41.27 | 56.46 |
| Greece | 29 | 42 | 15 | 46.89 | 39.9 | 56.95 |
| Thailand | 30 | 40 | 19 | 44.92 | 37.7 | 53.32 |
| Mexico | 31 | 43 | 18 | 44.50 | 37.4 | 53.90 |
| China | 32 | 24 | 39 | 43.41 | 48.35 | 39.82 |
| Brazil | 33 | 43 | 30 | 42.38 | 38.28 | 45.90 |
| Russia | 34 | 34 | 30 | 41.62 | 42.6 | 45.55 |

| Country | NCR | CSR | DSR | NCI | CSI | DSI |
|----------------------|-----|-----|-----|-------|-------|-------|
| United Arab Emirates | 35 | 39 | 30 | 41.57 | 40.39 | 46.22 |
| Poland | 36 | 44 | 28 | 41.46 | 36.75 | 47.75 |
| Saudi Arabia | 37 | 43 | 28 | 41.21 | 37.62 | 47.78 |
| Kuwait | 38 | 39 | 30 | 40.66 | 39.69 | 46.41 |
| Panama | 39 | 45 | 30 | 40.60 | 35.33 | 45.51 |
| Czech Republic | 40 | 48 | 32 | 39.63 | 34.23 | 44.44 |
| Philippines | 41 | 48 | 32 | 38.83 | 34.19 | 43.80 |
| India | 42 | 37 | 43 | 38.68 | 41.31 | 37.23 |
| Dominican Republic | 43 | 50 | 34 | 38.32 | 32.87 | 41.91 |
| Colombia | 44 | 47 | 38 | 36.75 | 34.62 | 41.10 |
| Jordan | 45 | 53 | 41 | 35.59 | 31.68 | 39.42 |
| South Africa | 46 | 53 | 44 | 34.93 | 32.07 | 38.24 |
| Croatia | 47 | 53 | 41 | 34.79 | 31.19 | 38.84 |
| Oman | 48 | 50 | 43 | 34.57 | 32.89 | 38.35 |
| Morocco | 49 | 55 | 44 | 33.23 | 28.98 | 38.07 |
| Turkey | 50 | 53 | 44 | 33.18 | 32.13 | 36.93 |
| Uruguay | 51 | 54 | 45 | 32.69 | 30.91 | 36.47 |
| Vietnam | 52 | 53 | 49 | 32.67 | 31.19 | 34.45 |
| Romania | 53 | 55 | 45 | 32.57 | 30.15 | 36.56 |
| Indonesia | 54 | 54 | 54 | 30.96 | 31.46 | 31.53 |
| Guatemala | 55 | 61 | 49 | 30.22 | 26.43 | 34.21 |
| Sri Lanka | 56 | 55 | 58 | 28.33 | 30.47 | 27.83 |
| Venezuela | 57 | 58 | 54 | 28.13 | 27.91 | 32.56 |
| Peru | 58 | 62 | 56 | 27.97 | 25.53 | 30.08 |
| Argentina | 59 | 62 | 54 | 27.73 | 26.09 | 31.33 |
| Pakistan | 60 | 56 | 61 | 27.19 | 28.61 | 26.75 |
| Egypt | 61 | 61 | 56 | 27.08 | 27.12 | 29.53 |
| Ukraine | 62 | 62 | 61 | 26.41 | 26.00 | 27.13 |
| Kenya | 63 | 63 | 63 | 24.75 | 26.08 | 24.99 |
| Iran | 64 | 63 | 65 | 24.74 | 26.21 | 23.65 |
| Bangladesh | 65 | 62 | 66 | 24.30 | 26.70 | 22.42 |
| Cambodia | 66 | 67 | 67 | 22.70 | 19.87 | 22.14 |
| Nigeria | 67 | 66 | 63 | 22.64 | 22.76 | 25.57 |
| Libya | 68 | 68 | 68 | 14.32 | 14.81 | 12.53 |

NCR: National Competitiveness Ranking, CSR: Cost Strategy Ranking, DSR: Differentiation Strategy Ranking,
 * NCI: National Competitiveness Index, CSI: Cost Strategy Index, DSI: Differentiation Strategy Index

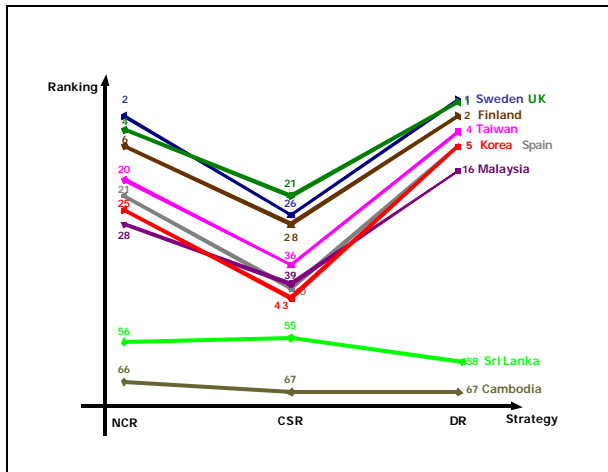


Figure 7: Changing Competitiveness of Medium Size Countries

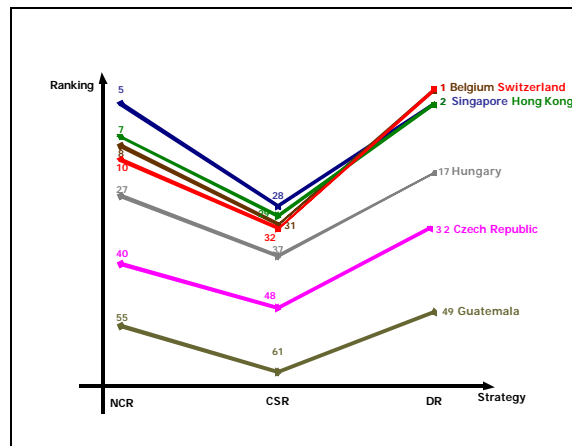


Figure 8: Changing competitiveness of Small Size Countries

nation's competitiveness can now be defined as a nation's relative competitive position in the international market among the nations of a similar situation. In this regard, our

report contains rankings among similar nations, as well as overall rankings. Major differences between this report and other reports are illustrated in Table 8 and Table 9.

Table 8: Comparison of the Three Competitiveness Reports

| Name of the Report | IMD The World Competitiveness Yearbook | WEF The Global Competitiveness Report | IPS The National Competitiveness Report |
|-----------------------------|---|--|--|
| Sponsoring institute | International Institute for Management Development | World Economic Forum | Institute of Industrial Policy Studies |
| Location | Lausanne, Switzerland | Geneva, Switzerland | Seoul, Korea |
| Year started | 1989 | 1996 | 2000 |
| Year compared | 2003 | 2003 | 2003 |
| Theoretical Base | No particular theory | No particular theory | 9-factor model (An extended diamond model) |
| Main factors | A collection of 4 factors - Economic Performance - Government Efficiency - Business Efficiency - Infrastructure (Each of 4 factors has been broken into five sub-factors) | A collection of 12 factors - Aggregate Performance - Macroeconomic environment - Technological Innovation and Diffusion - Information and Communications Technology - General Infrastructure - Public Institutions, Law - Public Institutions, Corruption - Domestic Competition - Cluster Development - Company Operation & Strategy - Environmental Policy - International institution | A collection of 9 factors 4 Physical Factors - Factor conditions - Demand conditions - Related & Supporting Industries - Business Context 4 Human Factors - Workers - Politicians & Bureaucrats - Entrepreneurs - Professionals - Chance events |
| Criteria | 321 | 188 | 272 |

| | | | |
|----------------------------|--|---|---|
| Data base | Hard data > 2/3 Soft data < 1/3 | Hard data < 1/4 Soft data > 3/4 | Hard data > 1/2 Soft data < 1/2 |
| Weights | Hard data: 2/3 Soft data: 1/3 Different weights for all groups | Different weights for different groups (Core, non-core) | Different weights for different strategy |
| Partner Institutes | Universities and other institutes | Universities and other institutes | 98 KOTRA offices abroad (Korea Trade-Investment Promotion Agency) |
| Number of Countries | 59 countries | 102 countries | 68 countries |

Table 9: Evaluation of the Three Competitiveness Reports

| Name of the Report | IMD The World Competitiveness Yearbook | WEF The Global Competitiveness Report | IPS The National Competitiveness Report |
|--------------------|---|---|---|
| Strengths | - The first, largest survey on national competitiveness - A collection of multiple variables for competitiveness | - Similar to IMD, but better than IMD in elaborating the variables - Continuous effort to improve the study | - Strong theoretical basis with minimum multicollinearity - Consistent survey through KOTRA offices abroad - Useful information of intra-group rankings |
| Weaknesses | - Weak theoretical basis - Frequent change of models - Lack of consistency among the partner institutes conducting the surveys - Low response rate | - In general, similar to IMD, but too much emphasis on soft data - Too complicated weights between soft/hard data for each variable - adn among the variables | - Improved weighting method, but still controversial |

Conclusion

When comparing national competitiveness, nations should be grouped with regard to similarities in terms of economic scale and structure. It is not very useful, for instance, to compare the competitiveness of the US and that of Bangladesh because these two countries are so different. For this purpose, this study proposed two criteria for economic scale and structure. One is a composite index of population and land size and the other is another composite index of incorporating the eight competitiveness variables. The classification of countries based on these two criteria is more comprehensive and accurate than the traditional method of only GNP, the IMD method of only population and the WEF method of only patents. Based on this new model, this study showed more accurate analysis and policy implications.

Another contribution of this study is the application of the generic strategy at the corporate level to the study of national competitiveness. Regarding this, very important conclusions can be drawn as follows. For large-size countries, either the cost strategy or the differentiation strategy should be carefully selected based on their competitive situations. For most of medium and small-size countries, the differentiation strategy would be more viable. Finally, for some countries neither the cost strategy nor the differentiation strategy will work. These “competitiveness-failed” countries need a radical change to escape poverty.

The most important contribution of this study is to emphasize the role of human factors and internationalization. Although they may not have abundant natural resources, the “competitiveness-failed” countries can gain competitive momentum by remobilizing human factors and opening up their economies. Needless to say, these two policy variables, human factors and internationalization, are also critical for further enhancing competitiveness of the already competitive countries

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Reflecting Applicability in Real Life

1. What competitiveness report you and leadership in your organization refer to for factual guidance on critical decisions?
2. Do you have any formal/informal approach to improve quality and teamwork among professionals and entrepreneurs in your organizations? How well is it functioning?
3. Identify few important initiatives in your industry that are aimed at enhancing competitiveness. Explore options by which you can participate and improve competitiveness.



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