

A Quantitative Analysis of Sinitic Influence in Sinosphere

- Based on Sinicization Index

Kang Kim, Hyewon*

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1. Introduction

In the past, Japan, Korea and Vietnam were heavily influenced by China, the originator of Sinic civilization. These countries tried hard to adopt the Chinese culture, some of which became the norms in the region. For this reason, it is generally accepted that the three East Asian countries plus Vietnam a Southeast Asian country have formed a cultural area known as

* Director, The Cultural Studies Centre of East Asia, Hong Kong China

Sinosphere or the East Asian cultural sphere. Over the last century, however, the Sinitic influence – the cultural influence of China – has been diminished due to the progress of westernization or industrialization in the region.

The followings are the two questions that people commonly ask about the current status of Sinosphere: 1) Which country, other than China, has been influenced the most by Sinic civilization? 2) How much does the Sinitic influence remain today in the region?

It won't be easy to answer these two questions, unless we have a systematic method to measure the Sinitic influence on each country's culture in the region. As an attempt to answer the questions, a way of measuring the influence is proposed in this study. More precisely, this study examines how to develop a new index to measure the influence, and then compares those countries in the region based on the scores measured from the index.

2. Developing an Index on Cultural Matters

In most cases, it is economists who develop various indices and show us which country ranks which position on a wide range of matters. For example, the Economic Intelligence Unit, a British business unit within The Economist Newspaper Limited, has developed Where-to-be-born Index, previously known as Quality-of-life Index, that attempts to measure which country will provide the best opportunities for a healthy, safe and prosperous life in the years ahead (The Economist 2012a). A well-established index is able to give us a clear view of a country's relative position on a certain social or cultural matter. Furthermore, this

kind of quantitative approach is one of the best ways to avoid ethnocentric explanations in cross-cultural studies.

There have been a very few non-economists who have developed indices on social or cultural matters, even though it doesn't really require high levels of mathematical or economical knowledge. One of them is Geert Hofstede, a Dutch social psychologist, who has developed the so-called Cultural Dimensions Theory as a result of factor analysis to examine the results of worldwide surveys. His model can describe the effects of a society's culture on the values of its members, and how these values relate to their behaviors (Hofstede 1984)¹⁾. He has proposed six dimensions in his model, and each of them has its own index which can be used to evaluate a country's relative position on a certain cultural or social matter. His indices have been widely used in social science studies, particularly in cross-cultural studies.

Another non-economist worth mentioning here is Ian Morris, a British archaeologist well known for his rather provoking book *Why the West Rules -For Now* (2010). In this book, he compared Eastern and Western development over the last 15,000 years. In order to compare the two civilizations in a quantitative manner, he developed a new index by the name of Social Development Index (Morris 2010a). As will be discussed later in this work, the two main challenges in developing a new index are to decide what aspects to be considered in the index and to find out how to quantify them. These are well addressed in his another book titled *The Measure of Civilization: How Social Development Decides the Fate of*

1) The aim of his research is to measure and understand how values in the workplace are influenced by culture. As a result, Geert Hofstede defines culture as the collective programming of the mind distinguishing the members of one group or category of people from others (Hofstede Insights 2019).

Nations (Morris 2010b).

3. Sinicization Index

The main reason why the people in the neighboring countries, i.e. Japan, Korea and Vietnam, adopted the Chinese culture was because they found the imported cultural things from China were useful for them either economically or socially. As briefly mentioned earlier, Morris evaluated a civilization based on how much it contributed to social development (Morris 2010a). In a similar manner, we should focus on China's major cultural or social inventions that greatly contributed to the social development of these countries, when measuring the Sinitic influence on these countries. If an imported cultural thing was not able to give the people in a foreign country substantial benefits, it would have had a slim chance of surviving as a part of the mainstream culture there. This means that we don't need to consider it here, if a certain cultural or social invention from China was not widely accepted for a long period of time in the region.

The people in the region tried to learn from China about a variety of its cultural or social inventions, but they were particularly keen on some of what we now call 'intellectual heritages'. It was because these things were essential prerequisites for upgrading their societies. Therefore, if we know how much each member of Sinosphere currently relies on China's intellectual heritages, we will be able to tell who has been affected the most by the Sinitic influence. In this sense, a new index – named as 'Sinicization Index' hereafter in this study – of measuring the Sinitic influence in the region can be defined as the degree of reliance on China's

intellectual heritages at a certain point of time.

Now, as the next stage, we need to decide which intellectual heritages should be taken into consideration when formulating Sinicization Index. For doing this stage, it is inevitable for us to focus on only a few key areas, each of which represents a component as a form of independent variable of the equation to formulate the index. For example, the estimating equation for the aforementioned Where-to-be-born Index includes around ten independent variables, such as material well-being measured by GDP per capita and job security measured by unemployment rate (The Economist 2012b).

As discussed, the main criteria for selecting the components of Sinicization Index should be whether or not they have greatly contributed to the social development of the countries in the region. It is obvious, however, that this selection process alone requires much effort. It may require an in-depth analysis of examining a number of surveys from experts in many different areas, and it surely is out of scope of this study. In this study, only three intellectual heritages among China's cultural and social inventions are considered as the independent variables to measure the score of Sinicization Index for each country in Sinosphere, as suggested at a previous work of Kang Kim (Kang Kim 2018, 242-247).

It is rather straightforward to choose the first two components for formulating the equation of Sinicization Index. The two should be Confucianism and *Hanzi*, i.e. Chinese Characters. In the aforementioned book written by Morris, his index breaks social development into four areas: 1) energy capture per capita, 2) organization, 3) information technology and 4) war-making capacity (Morris2010b). To borrow his terms, Confucianism and *Hanzi* have made a tremendous contribution to

the social development of each member of Sinosphere. It is because Confucianism was the foundation of social organizations, while *Hanzi* were the key for accumulating and transfer of knowledge in the region for a relatively long period of time.

The third area to be considered here as one of the three components in Sinicization Index is about Chinese calendar. In the past, every member of Sinosphere used to be pretty much an agricultural society where all the farming activities should be carried out in a timed sequence. Thus, it could be said that Chinese calendar – the only option they had – played a very critical role in the region. Even today, all the member of Sinosphere, except for Japan, follow the traditional Chinese calendar, i.e. *Shixian* calendar, to celebrate their traditional festivals such as Spring Festival or Chinese New Year. This is the reason why the three countries excluding Japan celebrate their traditional festivals at the same dates in most cases.

It is evident that the contribution of Chinese calendar for social development cannot be greater than those of Confucianism and *Hanzi* in the region. However, there is nothing else that can overshadow the contribution of Chinese calendar, in terms of social development. For example, Chinese calligraphy, one of the intellectual heritages that China has invented, helped improve the society artistically and spiritually. But, its contribution to social development cannot be compared to that of Chinese calendar in the region. Hence, Chinese calendar is considered as a minor component whereas Confucianism and *Hanzi* are considered as major components in this study.

4. Quantification

4.1. Reliance on Confucianism

Currently, there is no single country in Sinosphere who adopts Confucianism as its state ideology. The people in the region, however, are still under the influence of the long-lived Confucian traditions. There are a few distinguishable traits in people's ways of thinking in the region. In particular, it is well known that the people in the region have very strong tendency of collectivism due to the Confucian traditions. One thing to note here is that collectivism was necessary for agricultural societies in the past, and what Confucianism really did was to further strengthen the existing collectivism in the region.

In order to measure the degree of reliance on Confucianism, we have to know how often people pursue the Confucian values that are seldom found elsewhere. The three main characteristics of Confucianism are 1) intimate interpersonal relationship, 2) strict social hierarchy and 3) traditionalist conservation (Zhang et al. 2006, 107-115). However, it is quite difficult to quantitatively measure this kind of people's mindsets. It is mainly because Confucianism is no longer a law but a social norm that cannot force people to follow. In other words, whether or not people follow the Confucian values may differ depending on the situation.

One of the practical alternatives to measure the degree of reliance on Confucianism is to conduct a survey. But, using survey results may be lack of objectivity. It is because surveys are not based on people's actual behaviors but their subjective opinions. As another alternative way,

therefore, we may consider using existing indices. The most suitable one for this purpose should be Individualism Index (IDV), one of the six indices based on Hofstede's Cultural Dimension Theory²⁾. IDV is defined as the degree to which people in a society are integrated into groups (Hofstede 1984). This index has been known well-established and widely used in social science studies.

When comparing IDV scores of many different countries, it is easily noticed that the industrialized countries in North America and Western Europe have strong tendency of individualism whereas the developing countries in the rest of the world have strong tendency of collectivism. The only exception in this dichotomous classification is those countries in Sinosphere. For example, Japan and South Korea have relatively low IDV scores meaning that the people in these countries have tendency of collectivism, although the two are highly industrialized. As mentioned earlier, it is believed that the strong tendency of collectivism in the region is due to the old Confucian traditions. In this sense, it can be assumed that the people of a country within Sinosphere with a lower IDV score pursue the Confucian values more often than those with a higher IDV score.

The IDV scores for China, Japan, South Korea and Vietnam are 20, 46, 18 and 20 in a scale of 1 to 120, respectively, according to Hofstede (Hofstede Insights, National Culture). These scores can be translated into 17%, 39%, 15% and 17%, respectively, in terms of percentage. Hence, the degree of reliance on Confucianism (i.e. reciprocal values of IDV) should

2) The six indices based on Hofstede's Cultural Dimension Theory are Power Distance Index (PDI), Individualism versus Collectivism (IDV), Masculinity versus Femininity (MAS), Uncertainty Avoidance Index (UAI), Long Term Orientation versus Short Term Normative Orientation (LTO), Indulgence versus Restraint (IVR).

be as follows: 83% for China, 61% for Japan, 85% for South Korea and 83% for Vietnam (Kang Kim 2018, 246)³).

Although using IDV scores is convenient for estimating the degree of reliance on Confucianism in the region, this approach isn't flawless. It is because collectivism – one of the most typical characteristics that the countries in the region have in common – isn't all about Confucianism. Thus, in this study, both survey results and IDV scores will be used to estimate the influences of Confucianism.

4.2. Reliance on *Hanzi*

In the past, *Hanzi* used to be the only official writing system in the region. All of the three countries now have their own writing system. South Korea and Vietnam no longer use *Hanzi* for official documents and media with rare exceptions. In Japan, on the other hand, *Hanzi* are still being actively used for writing. But, unlike China, *Hanzi* play only a part in writing in Japan. *Hanzi* are basically used to write most of content words, but *Kana* – the Japanese syllabaries – are being used instead of *Hanzi* in many occasions. Hence, the actual frequency of *Hanzi* usage in Japan should be much less than the proportion of content words in the Japanese vocabulary.

Roughly speaking, meticulous media use *Hanzi* more often than casual ones in Japan. In order to estimate how often the average Japanese uses *Hanzi* for writing, we should check on an average medium in terms of using *Hanzi* and then count the number of *Hanzi* used there. For doing

3) They are calculated based on [Collectivism Index(%) = 100 - IDV x (100/119)].

this, the following two sentences were extracted from Wikipedia's Japanese site, which is believed to be one of the most popular semi-scholarly media in Japan. The two sentences are the descriptions for 'Yahoo' and 'China', respectively. 'Yahoo' is selected as a typical loan word, while 'China' as a typical Sino-Japanese word in the Japanese language. Here, it should be noted that 'Yahoo Japan' is the biggest internet portal site for the Japanese.

1. ヤフーは、アメリカ合衆国のインターネット関連サービスの提供を行っていた企業の草分けの1つであり、検索エンジンをはじめとしたポータルサイトの運営企業であった。
2. 中国（ちゅうごく）は、ユーラシア大陸の東部を占める地域、及び、そこで成立した国家や社会をさす用語。

The proportion of *Hanzi* in the two sentences above is approximately 30%. Based on this result, it can be assumed in this study that the degree of reliance on *Hanzi* as a writing tool in Japan is 30%⁴⁾.

There is another legacy *Hanzi* have left in the region. In trying to learn advanced things from China, the people in the neighboring countries had to read the books imported from China. The new vocabulary words that they learned from the books have become the largest part of their

4) There is no reliable reference about how often the Japanese actually use *Hanzi* in their daily life. It requires a tremendous effort to measure the actual frequency of *Hanzi* being used in Japan, since it needs to examine a vast number of sentences from many different written materials available in Japan. It should be noted that the aim of this study is not to obtain such data. This is the reason why only the minimum effort was made to assume the figure (i.e. 30%) in this study. Obviously, the assumption could be elaborated whenever any reliable reference is available in the future.

vocabulary. For example, the sinoxenetic words, i.e. borrowed words from Chinese,⁵⁾ represent approximately 60% share of the total vocabulary words listed in the dictionaries in Korean (National Institute of Korean Language 2001, 7), in Japanese (Shibatani 1990, 142), and in Vietnamese (DeFrancis 1977, 8). Like this, the influences of *Hanzi* as vocabulary are still predominant in the region and, therefore, should be considered together with the influences of *Hanzi* as a writing tool when measuring the Sinitic influence in the region.

The degree of reliance on *Hanzi* as vocabulary is how often they use the sinoxenetic words in their daily lives. This means that we should measure how often they use the sinoxenetic words both in the spoken and written languages. However, there have been no published data on the actual usages of sinoxenetic words in the three countries Japan, South Korea and Vietnam, obtained under the exact same conditions. Hence, it is assumed in this study that the degree of reliance on *Hanzi* as vocabulary is equally 60% for Japan, South Korea and Vietnam, based on the references mentioned the above.

4.3. Reliance on Chinese Calendar

The Gregorian calendar is today's global standard. All the countries in Sinosphere are no exception. However, the traditional Chinese calendar is still in use for some occasions in the region. The main usage of the Chinese calendar is to celebrate the traditional festivals in the region. For example, South Korea celebrates total of sixteen days as its national public holiday in 2019. Seven days out of the sixteen days are arranged

5) *Hanja-eo* in Korean.

by the traditional Chinese calendar, and they are for Lunar New Year, Buddha's birthday and the Autumn Festival.

The Chinese calendar is also being used for unofficial events. It is obvious that the elderly people prefer using the Chinese calendar. When they choose a date for important family events, some of them take auspices based on the Chinese calendar. However, it isn't easy to measure how often they use the Chinese calendar for unofficial events. Therefore, this study assumes that the reliance of the Chinese calendar is estimated by the proportion of the Chinese calendar's public holidays in the total public holidays. In this way, it is seven out of sixteen, i.e. 44% for South Korea. Similarly, the proportions for China, Japan and Vietnam are 59%, 0% and 55%, respectively.

5. Results

All the necessary figures for formulating Sinicization Index are summarized in Table 1.

| Intellectual Heritages | Confucianism | | <i>Hanzi</i> | | Chinese calendar |
|------------------------|--------------|----------------------|--------------|------------|------------------|
| | IDV | survey ⁶⁾ | writing | vocabulary | |
| China | 83% | 76% | ~100% | ~100% | 59% |
| Japan | 61% | 69% | ~30% | ~60% | 0% |
| S. Korea | 85% | 71% | ~0% | ~60% | 44% |
| Vietnam | 83% | N.A. | 0% | ~60% | 55% |

Table 1. Degree of Reliance on China's Intellectual Heritages.

6) In this table, the survey results for pursuing Confucian values are from the work of Zhang et al. (2006).

Now, as the final step, we have to make one last assumption, which is for deciding how to allocate the weights of the three components. As explained earlier, Confucianism and *Hanzi* are considered as major components while Chinese calendar is considered as a minor component of the equation to formulate Sinicization Index. In this sense, this study assumes that the weights of Confucianism, *Hanzi* and Chinese calendar are 40%, 40% and 20%, respectively. Here, it is also assumed that the two roles of *Hanzi* – as a writing tool and vocabulary – contribute the same amount with each other as 20% of weight for each.

If we use the IDV scores for Confucianism, the scores of Sinicization Index can be calculated as 85% for China, 42% for Japan, 55% for South Korea and 56% for Vietnam. This means that the Sinitic influence on South Korea and Vietnam are greater than that on Japan at the moment. For another trial, we can get 82% for China, 46% for Japan and 50% for South Korea, if the survey results are used for calculating the degree of reliance on Confucianism. This also shows that South Korea is affected by Sinitic civilization more than Japan.

Sinicization Index can also be used for diachronic comparison for a country. For example, let us go back five centuries ago in time. During that time, there were Ming Dynasty and Joseon Dynasty in China and Korea, respectively. The both kingdoms relied on *Hanzi* as the only official writing system and the Chinese calendar as their standard. Also, Confucianism was the only state ideology for both kingdoms. The only difference between the two in terms of the scores of Sinicization Index comes from the fact that the people in Joseon had a significant portion of native words in their vocabulary. Assuming that the portion was up to 70% (meaning 30% of Sino-Korean words in Korean), the score of Sinicization

Index for Korea about five hundred years ago is 86%, which is much higher than those of the current scores of 55% and 50% based on IDV and the survey results, respectively. China has also reduced the reliance on their intellectual heritages from 100% of Ming Dynasty to 85% (based on IDV) or 82% (based on the survey results) for today's modern China.

6. Conclusion

In this study, Sinicization Index was developed as an attempt to measure the Sinitic influence in Sinosphere. With several assumptions, this study managed to measure the scores of the index for each member of Sinosphere. The results showed that today's Sinitic influence on South Korea and Vietnam was larger than that on Japan. In other words, South Korea and Vietnam have been de-sinicized more than China but less than Japan. This was in accordance with the general knowledge among scholars. It is evident that there is room for further fine-tuning the formulation. As the first attempt of its kind, however, this study has proved that a quantitative analysis is useful for cross-cultural studies on East Asia.

References

- DeFrancis, John. 「Colonialism and Language Policy in Vietnam」. 『In The Sociology of Language』. No. 19, Mouton. 1997
- Economist, The. 「The lottery of life」. 21 November. 2012a
- Economist, The. 「The lottery of life methodology」. 21 November. 2012b
- Hofstede, Geert. 『Culture's Consequences: International Differences in Work-Related Values (2nded.)』. Beverly Hills CA: SAGE Publications. 1984
- Hofstede Insights. [https:// www.hofstede-insights.com](https://www.hofstede-insights.com).
- Kang Kim, Hyewon. 『*Hangukmunhwa eu taljunggukwa* [De-Sinicization of Korean Culture]』. Seoul: Somyung Publishing. 2018
- Morris, Ian. 『Why the West Rules – For Now』. New York NY: FSG. 2010a
- Morris, Ian. 『The Measure of Civilization: How Social Development Decides the Fate of Nations』. Princeton NJ: Princeton University Press. 2010b
- National Institute of Korean Language. 『*Susjaro salpyoboneun wurimal* [Examine Korean words through numbers]』. 2001
- Shibatani, Masayoshi. 『The Languages of Japan』. Cambridge University Press. 1990
- Zhang, Yang Bing et al. 「Harmony, Hierarchy and Conservatism: A Cross-cultural Comparison of Confucian Values in China, Korea, Japan and Taiwan」. 『Communication Research Reports 22』. 2006

Abstract

A Quantitative Analysis of Sinitic Influence in Sinosphere - Based on Sinicization Index

Kang Kim, Hyewon

A new index called Sinicization Index was proposed to measure the Sinitic influence on the countries in Sinosphere. The index was defined as the degree of reliance on the intellectual heritages Sinic civilization produced. Confucianism, *Hanzi* and Chinese calendar were considered as the intellectual heritages for formulating the equation of the index. The estimated scores of the index showed that the Sinitic influence on South Korea and Vietnam was greater than that on Japan at the present day.

Key words: Sinic Civilization, Sinicization Index, Quantitative Analysis, East Asia, Sinosphere, Intellectual heritage.

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