

중국과 한국의 문화산업의 효율성 비교

Comparison of Cultural Industry Efficiency between China and Korea

굴천우*, 임광혁**, 김상욱***

渤海大学 经济学院*, 배재대학교 전자상거래학과**, 배재대학교 중국학과***

Qu Tian You(304649310@qq.com)*, Kwang Hyuk Im(khim@pcu.ac.kr)**,
Sang Wook Kim(jinxiangyu@pcu.ac.kr)***

요약

문화산업은 국가경제성장에 있어서 역할이 점차적으로 증대하고 있으며, 타 산업에 미치는 윈도우효과가 크기 때문에 더욱 주목 받고 있는 산업이다. 특히 중국은 2000년대 이후 산업구조고도화 측면에서 문화산업의 발전을 적극적으로 추진하고 있다. 한국은 중국보다는 상대적으로 일찍이 문화산업에 대한 집중적인 투자를 통해 국가경제성장에서 주도적인 역할을 담당하고 있다. 따라서 본 연구는 중국과 한국 양 국가 간의 문화산업의 효율성을 비교함으로써 문화산업이 경제성장에 미치는 영향과 잠재력에 대해 비교해 보고자 한다. 한국과 중국의 문화산업의 효율성을 비교할 때 가장 큰 애로점은 비교 가능한 통계자료의 구축이다. 본 연구에서는 효율성 분석을 위한 투입변수로 사업체 수와 종사자 수를 선정하고 산출변수는 문화산업의 매출액을 선정한 다. 그리고 DEA-Malmquist지수를 통해 효율성을 비교 분석한다. 한국의 자료는 지자체 통합DB와 KOSIS에서 기초 자료를 이용하고 있으며, 중국의 자료는 국가통계국의 자료를 이용하고 있다. 분석기간은 2013-2017년으로 설정하고 있다. 분석결과에 의하면 한국의 Malmquist지수는 1.048로 나타나고 있으며, 중국은 1.041로 나타나고 있다. 즉 한국은 분석 기간 중 4.8%의 효율성이 개선되고 있으며, 중국은 4.1%의 효율성이 개선되고 있는 것으로 나타났다. 이러한 분석 결과는 이 기간의 한국은 문화산업이 성숙기로 접어들고 있는 시기이며 중국은 성장기로 진입하는 시기이기 때문으로 해석할 수 있다.

■ 중심어 : | 중국 | 한국 | 문화산업 | 효율성 | DEA-Malmquist 지수 |

Abstract

Cultural industry's role in national economic growth has increased gradually and drawn increasing attention due to the immense window effect on other industries. Especially, China has fully pushed forward with the development of cultural industry to sophisticate industrial structure since the 2000's. In Korea, the cultural industry has played the leading role in the national economic growth through intensive investment relatively early compared with China. Under the circumstance, this study compared the cultural industry efficiency between China and Korea to examine cultural industry's impact on economic growth and its potentials. The greatest difficulty in comparing the cultural industry efficiency between China and Korea is the development of comparable statistical data. This study chose the number of businesses and the number of employees as the input variables for efficiency analysis and the sales of cultural industry, the output variable. Also, the efficiency was comparatively analyzed through DEA-Malmquist index. Integrated DB about local governments and basic data from KOSIS were used for Korean data and the National Bureau of Statistics of China's data were used for Chinese data. The analysis period was set to 2013-2017. According to analysis, the Malmquist index for Korea was 1.048 and China, 1.041. In other words, Korea improved the efficiency by 4.8% during the analyzed period and China, 4.1%. This result can be attributed to the fact that the cultural industry in Korea was reaching maturity during this period while the cultural industry in China was entering the growth period.

■ keyword : | China | Korea | Cultural Industry | Efficiency | DEA-Malmquist Index |

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교신저자 : 김상욱, e-mail : jinxiangyu@pcu.ac.kr

I. Introduction

The role of cultural industry in economic growth has increased gradually. Various empirical analyses are examining cultural industry's impact on economic growth[1][2]. Where existing studies are divided based on spatial aspect, they can be divided into the case that targets region, the case that targets city, and the case that targets country. Most of these studies conclude that the cultural industry is statistically significant for the economic growth of a country, region, or city. Empirical studies on not only the cultural industry's impact on economic growth but also the efficiency of the cultural industry have been carried out in various aspects. The empirical analysis on the influence of the cultural industry on economic growth and the efficiency of cultural industry can be carried out where it targets a single country, however, faces the limit of the inconsistency of statistical indices where it compares data between countries, because different countries apply different statistical categories for the cultural industry. This study analyzed the cultural industry efficiency between China and Korea to determine how the issue of different statistical category between countries influence empirical analysis. Building up analyzable statistical data is the most essential part in making international comparison. Chapter 2 surveyed preceding researches and Chapter 3 compared the statistics indices of the cultural industries of China and Korea. Chapter 4 made a comparative analysis of the efficiency of the cultural industries of Korea and China using the Malmquist index.

II. Precedented Studies

Cultural industry's efficiency has been analyzed in various aspects. The reason cultural industry is drawing increasingly more interest is that its role in economic growth is growing[2]. Cultural industry can cause great ripple effect on other industries or business types as it creates an external economies called the "window effect." The analysis of cultural industry's efficiency can be generally divided into the analysis by business type and analysis by region. The analysis by business type compares the efficiency between business types within cultural industry[3] and the analysis by region, between regions[4]. The premise that the comparative analysis of efficiency by business type or by region is possible is based on the congruity between statistical categories. However, the comparison of cultural industry's efficiency between countries faces the limit, the incongruity between statistical categories, because countries define cultural industry differently.

Most existing studies analyzed the efficiency of cultural industry by region or by business type within the country. Studies on the efficiency of China's cultural industry include the study by Kim Sang-wook (2017) using the DEA model and the study by Shi Hui-min & Jeong Hong-Yul (2019) [5][6]. The study by Seo Ho-joon (2017) analyzed the efficiency of cultural contents industry in Korea by region[7]. The analysis used Malmquist index. However, these studies targeted the country and did not made international comparisons. This study is distinguished from them for its emphasis on the comparison of the efficiency of cultural industry between China and Korea.

III. Comparison of Cultural Industry Statistics between China and Korea

1. Division of Cultural Contents Industry of Korea

The definition of culture must precede the definition of cultural industry. The most general definition of culture is the lifestyle of a society or an ethnic group. This mixes the idealistic view, which questions whether the culture should be regarded as an abstract idea or a specific object and event, and the holistic view. Realistically, culture includes both idealistic view and holistic view. The problem is that there are differences about idealistic view and holistic view in each country, which makes the definition of culture an ongoing issue.

The definition of cultural industry varies further by country, because it can change depending on the situation each country is faced with. The meaning of cultural industry in a country with relatively high level of economic development and that in a country with relatively low level of economic development may unfold differently. Like other industries, production and consumption are the basic structure of cultural industry. In particular, the industry places more emphasis on the economic potential of production in terms of the concept of cultural industry. America introduced concepts like entertainment industry or copyright industry and various concepts are used in other places such as cultural industry in France and China, contents industry in Japan, and creative industry in the UK[8].

In Korea, the concept of digital cultural contents was introduced in relation to cultural goods since the 2000's and this was given the institutional basis through the revision of the

Framework Act on the Promotion of Cultural Industries (2002). Later, Korea defined cultural industry as cultural contents industry. Cultural contents are contents (data or information such as symbol, letter, voice, sound, and video) with cultural elements (artistic value, creativity, entertainment, leisure, and publicness) and it is the concept that includes all digital and analog cultural contents [9]. Based on this concept, cultural product adds the possibility of creating economic added values to cultural contents. Not all cultural contents develop into cultural industry. A beautiful painting does not automatically become a cultural good. It becomes a cultural good only when it creates economic added value. Cultural industry adds production, distribution, consumption, and other services to cultural goods. In other words, cultural goods develop into cultural contents when they are combined with forward linkage and backward linkage. Strictly speaking, cultural contents industry is based on cultural contents, and cultural industry's category is greater than that of cultural contents industry[10]. However, cultural industry and cultural contents industry are sometimes used indiscriminately depending on the purpose of study.

Although the cultural contents industry is categorized, there is a problem of congruity with standard industrial classification system, which has a limit in identifying the field of contents industry due to the inclusiveness as it applies to overall economic production activities. Also, the system is characterized by the rule of classifying industries based on the unit of production, the input and output of production elements. In other words, it is difficult for the standard industrial classification system to function as a useful resource in

understanding the particular structure of the contents industry where various production elements are fused horizontally and the perpendicular value chain structure connecting production, distribution, and service is embedded in it[11]. Korea established Korean Standard Industrial Classification (KSIC), but it has a problem in terms of congruity in applying it to cultural contents industry and established a separate special contents classification in 2010.

The special contents classification was established by referring to international standards prepared by OECD and UNESCO and reflect the characteristics of domestic industry, and it is characterized by the exclusion of the redundancy with other categories to intensify the possibility of collecting and using statistical data. The special contents classification developed the items of classification by reviewing the possibility in securing the parent group of the item of classification, the possibility in connecting to the standard industrial classification, and appropriateness of industrial coverage, and the initial classification comprised eight categories, 22 subcategories, and 65 groups. The first revision of the special contents classification took place in 2012 to include the fields newly introduced due to the advancement of contents industry. The revised special contents classification was organized into the value chain system for each industry and was divided into 12 categories, 51 subcategories, and 131 groups. This indicates that the category division of contents industry became quite elaborate comparing to the 2010 categorization. The classification revised in 2012 divided existing category, Publication Industry, into Publication Industry and Cartoon Industry. Also, it divided the Music,

Film/Video/Animation category, which was a single category, into Music Industry, Film Industry, and Animation Industry, changed Information Service Industry into Knowledge Information Industry, and created a new category, Contents Solution Industry.

2. Division of Cultural Industry of China

China's cultural industry has rapidly grown since the 2000's and started categorizing the cultural industry. China's categorization of cultural industry is based on the categorization of culture and related industries announced by National Bureau of Statistics of China in 2004. This category defined cultural industry and related industries as a "set of activities that provide cultural and entertainment goods and services to the society and the public and related activities." [12] The activities in this definition include the production and sales of cultural goods, cultural broadcasting service, cultural leisure and entertainment service, production and sales of cultural items, production and sales of cultural facilities, and production and sales of culture related goods. However, it is quite difficult to actually distinguish business types that can be classified as cultural industry based on this standard. Also, since the business aspect of China's cultural industry is still given greater significance than its industrial aspect, the Statistical Yearbook on Chinese Culture and Civilization categorizes the culture sector into Library Services, Public Culture Services, Art Services, Cultural Market Management Organization, Civilization Services, Cultural Education, and Cultural Science and Technology. Based on this categorization, the cultural industry can be categorized into business cultural industry and public cultural

industry. Library Services, Public Culture Services, Art Services, Civilization Services, Cultural Education, and Cultural Science and Technology can be included in the public cultural industry and Cultural Market Management Organization can be included in the business cultural industry. Cultural Market Management Organization is defined as the organization which is engaged in culture management or culture service by obtaining ratification from the cultural market administration authority or by obtaining related license[9].

China established Culture and Related Industry Category 2012 to improve the limits of the 2004 categorization and distinguish cultural industry and cultural business. Unlike the 2004 categorization, the 2012 categorization defines cultural industry as a set of activities that produce culture related goods. According to the 2012 categorization, cultural industry is generally divided into the production of cultural goods and the production of culture related goods. In this definition, the production of cultural goods becomes principal and the production of culture related goods becomes subsidiary. The production of cultural goods seven sectors (newspaper / publication / issue service, broadcast / TV / film service, cultural art service, cultural information / delivery service, culture creation design service, cultural leisure / entertainment service, production of craft works and artworks), and the production of culture related goods includes the subsidiary production of cultural goods, production of cultural items, and production of culture exclusive facilities. Compared with the 2004 categorization, the production of cultural goods introduced advertisement, SW, and tourism, and

the production of culture related goods introduced culture trade, exhibition, culture loan, and auction, which are newly growing business types[12].

The 2012 categorization did improve the 2004 categorization. Still, however, the National Bureau of Statistics of China revised Culture and Related Industries Categorization 2018 to reflect the development of various contents in the rapidly evolving cultural industry and connect to the newly established National Economic Business Types (GB/T 4754-2017). The 2018 categorization is comprised of 9 categories, 43 subcategories, and 146 groups. The category is divided into two sections. One is the activity of producing cultural goods (goods and services) such as creation, manufacture, propagation, and exhibition for directly satisfying mental demand by using culture as the main content. Specifically, this includes newspaper information service, contents creation and production, creative design service, culture propagation channel, cultural investment management, and culture / entertainment / leisure services. The other is the activity needed for realizing the production of cultural goods. Specifically, it includes subsidiary production of culture and brokerage service, cultural equipment production, and culture consumption and final production (manufacture and sales).

3. Comparison of Cultural Industry Statistics between China and Korea

Two statistical yearbooks provided the data on China's cultural industry. First book is the Statistical Yearbook on Chinese Culture and Civilization, which is compiled by the Ministry of Culture and Tourism of China. Statistical

Yearbook on Chinese Culture and Civilization places greater importance on cultural industry than cultural business, which gives limits in providing statistical data required for the analysis of cultural industry. Second book is the China Statistical Yearbook on Culture and Related Industries, which is published by Department of Social, Science and Technology, and Cultural Statistics of National Bureau of Statistics of China instead of the Ministry of Culture and Tourism. China Statistical Yearbook on Culture and Related Industries provides data in three categories: culture production, culture distribution, and culture service industries. This division is more meaningful in understanding the cultural industry because it divides cultural industry into culture production and service industries and the distribution industry that connects them as products are divided into goods and services in economics. As described above, China's cultural industry related statistical data are categorized differently between the Ministry of Culture and Tourism, and the National Bureau of Statistics of China. This may cause a confusion such as discrepancy in data in related studies. It is also necessary to pay attention to the fact that the definition of categories are changing even in the data provided by National Bureau of Statistics of China.

The significance of the added value of the cultural industry of China in GDP was 2.13% in 2004 and increased up to 4.20% in 2017. However, the data between 2004-2011 are based on the 2004 categories of culture and related industries, data between 2012-2016 are based on the 2012 categories, and the 2017 data are based on the 2018 categories.

[Table 1] shows the importance of the cultural

industry of China in GDP as of 2017. There were 60,251 companies and 8.814 employees in the cultural industry. Keep in mind that the statistical data in [Table 2] only includes companies of a certain scale instead of all companies. The companies of a certain scale here refers to the companies recording 20 million yuan in sales in a year.

Table 1. Importance of Cultural Industry in China by Business Type (2017, %)

Division	Number of Companies	Number of Employees	Sales
Newspaper Information Service	3.6	6.0	7.1
Creative Production of Contents	20.0	22.0	20.0
Creative Design Service	17.5	10.8	11.0
Culture Transmission Channel	12.3	7.6	9.4
Cultural Investment Operation	0.6	0.4	0.6
Cultural Entertainment and Leisure Service	8.9	6.0	1.6
Cultural Auxiliary Production and Brokerage Service	17.5	18.8	17.9
Production of Cultural Equipment	5.0	9.2	11.1
Culture Consumption and Final Production	14.5	19.2	21.2
Total	100	100	100

In [Table 1], newspaper information service accounted for 3.6% of the number of companies and 7.1% of sales as of 2017. Creative production of contents accounted for 20.0% of the number of companies, 22.0% of the number of employees, and 20.0% of sales. According to this table, culture consumption and final production, creative production of contents, cultural auxiliary production and brokerage service, production of cultural equipment, and creative design service show relatively high importance, respectively, based on sales, and newspaper information service and culture transmission channel have relatively low

importance. This indicates that the cultural industry of China is gradually developing into high-value added business type from low-value added business type. Especially, cultural entertainment and leisure service accounts for 8.9% of the number of companies while accounts for only 1.6% of sales. This indicates that the role of cultural entertainment and leisure service business type in China's cultural industry is decreasing gradually.

For statistical data related to Korea's cultural contents industry, the integrated DB about local governments[13] and Korean Statistical Information Service (KOSIS) can be used. Unlike China, Korea does not publish statistical yearbook on cultural contents industry. Instead, the data of National Statistical Office can be used. National Statistical Office is providing data on total eleven categories: publication, cartoon, music, game, film, animation, broadcasting, advertisement, character, knowledge information, and contents solution industries, according to the special contents classification revised in 2012. Also, it refers to these categories collectively as cultural industry or contents industry. According to KOSIS data, cultural industry in Korea accounted for 2.39% of GDP in 2005 and 2.56% in 2017 with small increase. Compared to China, cultural industry takes a smaller portion of GDP in Korea. This can be interpreted that Korea's cultural industry is already in the mature stage and China's cultural industry, still in the growth stage. Another reason can be found in the category of cultural industry. As it is indicated in the categorization of cultural industry of China in 2018, the cultural industry includes culture production, culture service, and culture distribution. This shows that the category of

China's cultural industry is greater compared with the statistical category of Korea. As a result, the importance of the added value of the cultural industry in the entire GDP could appear relatively high.

Table 2. Importance of Cultural Industry in Korea by Business Type (2017, %)

Division	Number of Companies	Number of Employees	Sales
Publication	24.5	28.7	18.4
Cartoon Industry	6.8	1.6	1.0
Music Industry	34.2	11.9	5.1
Game Industry	12.3	12.7	11.6
Film Industry	1.3	4.6	4.9
Animation Industry	0.5	0.8	0.4
Broadcasting Industry	1.0	7.0	16.0
Advertisement Industry	6.9	10.1	14.5
Character Industry	2.1	5.4	10.5
Knowledge Information Industry	8.7	12.8	13.3
Contents Solution	1.8	4.4	4.3
Total	100	100	100

[Table 2] shows the importance of cultural industry in Korea by business type as of 2017. The business type with the largest number of companies was the music industry which accounted for 34.2% followed by publication and game industries accounting for 24.5% and 12.3%, respectively. The business type with the largest number of employees was publication which accounted for 28.7% followed by knowledge information and game industries accounting for 12.8% and 12.7%, respectively. The music and advertisement industries also accounted for 10% or more, respectively. The business type taking the largest portion in terms of sales was publication industry, which accounted for 18.4%, followed by broadcasting and advertisement industries accounting for 16.0% and 14.5%, respectively.

In [Table 2], broadcasting, advertisement, knowledge information, character, film, and

contents solution industries show relatively high sales despite small number of companies. On the contrary, the sales in publication, cartoon, and music industries were not as large as the number of companies. This indicates that the industries in the former case have relatively high efficiency and those in the latter case, lower. The next chapter compared the relative efficiency based on empirical analysis.

IV. Empirical Analysis

1. Analysis of Korea's Cultural Industry Efficiency

For the analysis of cultural industry efficiency, the input and output structures must be developed first. Generally, the capital and labor force of the production function are used as the input variables and sales or added value can be used as the output variable. Kim Sang-wook (2011) used the number of workers and the number of companies as the input variables in analyzing the efficiency of the cultural industry of China in each region and the added value as the calculation variable. Also, Kim Sang-wook (2017) used total assets as the proxy variable of the capital[3][5]. The problem is the statistical data that can be used. Also, the availability of the data can be problematic when the unit of analysis is company or business type. It is possible to use the number of companies, the number of employees, total expenses, sales, and added values in the cultural industry from integrated DB about local governments and KOSIS. In other words, the number of companies, the number of employees, and total cost can be taken as input variables and sales and added values, output variables. However,

added values are available by business type only up to 2013, but not from 2014 and therefore, cannot be used as output values in the comparative analysis by business type. Also, the total cost data are only available for publication, cartoon, music, animation, character, knowledge information, and contents solution and not for game, broadcasting, and advertisement industries which account for large portions in sales. Ultimately, the number of companies and the number of employees were taken as input variables and the sales, output variable to carry out the efficiency analysis. The analysis period was set to 2013-2017. The analysis used DEA-Malmquist index. DEA-Malmquist index is one of the commonly used methods for empirical analysis for it is not influenced by the structure of input and output variables and may take the dynamic changes of efficiency into account.

[Table 3] shows the analysis result of Korea's cultural industry efficiency by business type. According to the analysis results, the efficiency of Korea's cultural industry did not improve between 2013-2017, but worsened by 1.5% as the Malmquist index appears as 0.985. Regarding the relationship between input and output, this means that the output did not increase as much as the input or the output rather decreased when the input increased. The results by business type indicates that the publication industry's efficiency improved by 12.0% and the game industry, 55.6%. The broadcasting industry's efficiency improved by 100% or higher. The reason the efficiency of the broadcasting industry increased enormously is that the number of companies, which is the input variable, increased slightly during the analysis period from 912 to 1,027 when the

sales increased sharply from 8.6 trillion won up to 18.04 trillion won. Since efficiency results from the relationship between input and output variables, it improves when input is relatively small and output is relatively large.

Table 3. Comparison of Korea's Cultural Industry Efficiency by Business Type

Division	Efficiency Change	Technological Progress	Malmquist Index
Publication	1.353	0.828	1.120
Cartoon Industry	0.323	0.556	0.180
Music Industry	1.108	0.809	0.897
Game Industry	1.741	0.894	1.556
Film Industry	1.206	0.809	0.975
Animation Industry	1.000	0.907	0.907
Broadcasting Industry	2.438	0.824	2.008
Advertisement Industry	1.159	0.911	1.056
Character Industry	1.157	0.819	0.948
Knowledge Information Industry	2.021	0.880	1.778
Contents Solution	1.099	0.867	0.953
Total	1.199	0.821	0.985

The business types with deteriorating efficiency are cartoon, music, film, animation, and character industries. The cartoon industry in particular is showing relatively rapid deterioration, and accordingly, it is deemed that the cartoon industry has low growth potential compared with other business types.

2. Analysis of China's Cultural Industry Efficiency

It is also necessary to construct the structure of input and output variables to analyze the efficiency of China's cultural industry. To set variables, available data should be secured first. However, China has re-categorized the cultural industry through the revision of the categorization system in 2004, 2012, and 2018. This re-categorization gives more realistic meaning to empirical analysis for the fact that

it reflects the development of the cultural industry, however, has another limitation for the congruity of data for dynamic analysis. While the 2017 data are divided into nine categories, the 2012-2016 data are divided into ten. Also, the data before 2016 do not provide the number of employees in those ten categories. This makes the data available for empirical analysis very limited. The input and output variables should be determined appropriately and re-determine the unit of analysis based on available data to overcome this limit. As specific data by business type have too much limit to be used in the empirical analysis of China's case, they were divided into culture production, culture distribution, and culture service industries.

The number of companies and the number of employees were taken as the input variables for the efficiency analysis for the comparison with the empirical analysis on Korean data. Also, the sales were taken as the output variable. As explained in the previous chapter, the analysis targeted companies with 20 million yuan in sales only. The comparison of China's cultural industry efficiency by business type is shown in [Table 4].

Table 4. Comparison of China's Cultural Industry Efficiency by Business Type

Division	Efficiency Change	Technological Progress	Malmquist Index
Culture Production	1.000	1.038	1.038
Culture Distribution	1.000	1.055	1.055
Culture Service	1.014	1.038	1.053
Average	1.005	1.044	1.049

According to the analysis results, China's cultural industry efficiency increased by 4.9% during 2013-2017 period. By business type, culture production industry improved its efficiency by 3.8%, culture distribution industry

by 5.5%, and culture service industry by 5.3%. The improvement of efficiency was relatively prominent in culture distribution and culture service industries. Especially, regarding the change in efficiency, culture production and culture distribution industries did not improve efficiency but culture service industry showed 1.4% improvement. This is deemed to indicate that China's cultural industry is gradually developing from low-value added business type to high-value added business type.

3. Comparison of Cultural Industry Efficiency between China and Korea

It is necessary to set input and output variables to compare the cultural industry efficiency between China and Korea as they were set in previous analytical methods. Unlike analyzing China and Korea on country level, setting comparable variables and securing data are most important for the comparative analysis between countries. For country to country comparison, previous analysis used the number of companies and the number of employees as input variables and the sales as the output variable to evaluate the efficiency of cultural industry between China and Korea. The analysis period was set to 2013-2017 for both countries to compare the results. The following table shows the results of analyzing the relative efficiency of cultural industry between China and Korea using the same variables. According to results, the efficiency of cultural industry between China and Korea during 2013-2017 improved by 4.4% in average. Also, the efficiency of Korea's cultural industry improved by 4.8% when China and Korea were compared, and the efficiency of China's cultural industry

improved relatively by 4.1%. Overall, Korea's cultural industry efficiency appears slightly higher than China. This result carries relatively meaning. In other words, the Malmquist index was 0.985 when Korea's cultural industry efficiency was analyzed, which rather indicates that the efficiency did not improve, and the Malmquist index for China was 1.049, which indicates 4.9% improvement of efficiency, but the degree of improvement decreased slightly as the comparison with Korea showed 4.1% improvement of efficiency. The result appears as this because the efficiency analysis is relative. In other words, the degree of improvement of Korea's cultural industry efficiency is more noticeable in comparison with China. This can be attributed to higher competitiveness of Korea's cultural industry than that of China's cultural industry.

Table 5. Comparison of Malmquist Index between China and Korea

Division	Efficiency Change	Technological Progress	Malmquist Index
China	1.000	1.041	1.041
Korea	1.000	1.048	1.048
Average	1.000	1.044	1.044

V. Conclusion and Future Research Directions

This study comparatively analyzed the cultural industry efficiency between China and Korea. The same input and output variables and analysis period were applied for the comparison between two countries. Input variables were the number of companies and the number of employees and output variable was sales. Korea's cultural industry efficiency

could be divided by business types, but in China's case, the types were divided into culture production, culture distribution, and culture service due to the limit on available data rather than analysis by business type. Korea's cultural industry is showing higher rate of improvement when the Malmquist index is compared between China and Korea. This can be interpreted that Korea's cultural industry is relatively more competitive than China's cultural industry. This study compared the efficiency of cultural industries of Korea and China regardless of the limitations of statistical data. This type of study has important implications for the preparation of statistical data between countries for future studies.

This study also discovered that the coherency of statistical data is important for the comparison of cultural industry between countries. OECD and UNESCO have given efforts to develop statistical data relating to cultural industry since the 1990's. Unlike other industries, there is a limit in conducting an empirical analysis on the cultural industry if statistical indices fail to reflect the creation of a variety of cultural products. Therefore, the organizations related with national statistics shall cooperate with each other to develop an environment to share statistical data, and the empirical analysis based on this environment is expected to play a positive role for industrial development between countries.

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저 자 소 개

굴 천 우(Qu Tian You)

정회원



- 2014년 2월 : 배재대학교 경영학과 (경영학사)
- 2016년 8월 : 배재대학교 동아시아 학과(경제학 석사)
- 2019년 8월 : 배재대학교 동아시아 학과(경제학 박사)
- 2019년 ~ 현재 : 渤海大学 经济学院 講師

院 講師

〈관심분야〉 : 기술혁신, 기업혁신, 기업관리

임 광 혁(Kwang Hyuk Im)

정회원



- 1995년 2월 : 한국과학기술원 전산학과(공학사)
- 2000년 8월 : 한국과학기술원 산업공학(공학석사)
- 2006년 2월 : 한국과학기술원 산업공학(공학박사)
- 2006년 ~ 2008년 : 삼성전자(주)

반도체연구소 책임연구원

- 2008년 ~ 현재 : 배재대학교 전자상거래학과 교수

〈관심분야〉 : 지식서비스, 경영정보시스템, 전자상거래, 데이터마이닝, 고객관계관리, 정보보안, 빅데이터

김 상 욱(Sang Wook Kim)

정회원



- 1996년 : 경북대학교 경제학과(경제학 학사)
- 1998년 : 경북대학교 경제학과(경제학 석사)
- 2002년 : 南開大學校 경제학과(경제학 박사)
- 2008년 ~ 현재 : 배재대학교 중국

학과 교수

〈관심분야〉 : 문화콘텐츠산업, 중국지역경제, 지역문화, 중국IT산업, 효율성분석