

## 공연시설의 지역별 적정배치에 관한 연구

송 우 영

나사렛대학교 음악목회학과

# A Study on the Optimal Regional Placement of Performance Facilities

Woo-Young Song

Department of Music Ministry, Nazarene University, Cheonan 31172, Korea

### [요 약]

본 연구에서는 한국의 공연시설에 대한 현황을 분석하고 개선해야 할 과제를 도출하였다. 분석결과 한국의 공연시설은 서울 지역에 지나치게 편중되어 있고 지방의 경우 면적대비 공연시설이 부족하여 거주자들의 접근성이 매우 낮은 것으로 나타났다. 본 연구에서는 이러한 문제를 해결하기 위한 방법으로 공연시설의 적정배치를 위한 시스템개발방안을 제시하였다. 또한 본 연구의 최종적인 목적은 공연시설의 가동률 및 재정자립도를 향상시키는 것이므로 적정 공연유형을 산출하는 시스템에 대한 개발 방안도 함께 제시하였다. 다음은 요약문입니다.

### [Abstract]

In this study, the current status of the South Korean performance facilities was analyzed, and then the key tasks for the improvement of such facilities were identified. The study results show that the country's performance facilities are disproportionately concentrated in the Seoul region whereas the lack of performance facilities per unit area in the other regional provinces considerably lowers the accessibility of such facilities to the local residents. As part of the measures to solve such problems, this study proposed the development of a system that would enable the optimal placement of such performance facilities. It also proposed the development of another system that can simulate and suggest an optimal performance type for a given region because the ultimate goal of this study was to raise the utilization rate and financial self-reliance of the performance facilities in South Korea.

**색인어** : 문화예술 분야, 최적입지, 공연유형, 공연시설, 의사결정 시스템

**Key word** : Culture and arts domain, Optimal Placement, Performance type, Performance Facilities, Decision making system

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\*Corresponding Author; Woo-Young Song

Tel: +82-041-570-7858

E-mail: Jazzbass@kornu.ac.kr

## I. Introduction

By the 2000s, South Korea’s culture and arts had achieved so much progress in terms of growing its global influence that a new term was created to describe such phenomenon: Korean Wave. On the surface, the country’s culture and arts sector seems to be achieving remarkable successes, but some argue that such successes are limited to a few industrialized areas. In the case of the performance market, which has a potential to expand the basis of the country’s culture and arts sector, it has not grown to the levels in advanced countries, and a significant regional disparity is observed. For the expansion of the performance market, there is an indisputable need to distribute and arrange the related facilities appropriately across different regions. As the country’s population structure is changing fast in many regional areas, the placement of performance facilities that allows the country to catch up with such shifting trend is urgently needed. No study is being systematically conducted, however, on the optimal placement of the related facilities. Accordingly, in this paper, the current status of the performance facilities in South Korea is analyzed, and system development directions that will ensure the optimal placement of such facilities are proposed.

## II. The Performing Arts in South Korea and Previous Studies

### 2-1 Present state of the performing arts in South Korea

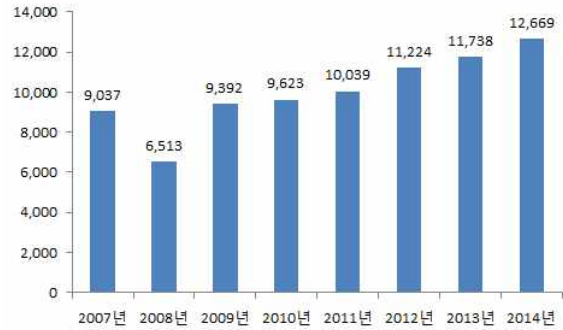
The number of performance facilities and performing arts venues in South Korea has steadily increased since 2007. In 2014, the number of performance facilities was 1,034, and the number of performing arts venues was 1,280. It can thus be concluded that the physical bases for the South Korean performing arts have been steadily improving. Such steady growth rate since 2007, however, markedly dropped to 3.3% in 2013 before leveling off at 4.3% in 2014.

표 1. 공연시설 수 추이

Table. 1. Number of performance facilities in South Korea by year

Criteria	2007	2008	2009	2010	2011	2012	2013	2014
No. of facilities	662	732	772	820	868	944	984	1,034
No. of performing arts venues	891	927	967	1,021	1,093	1,188	1,227	1,280
Growth rate of the no. of performing arts venues	-	4.0%	4.3%	5.6%	7.1%	8.7%	3.3%	4.3%

Source: Census on Performing Arts 2015



Source: Census on Performing Arts 2015

그림 1. 공연시설 종사자수 추이

Figure 1. Number of employed staff at the South Korean performance facilities by year

The number of employed staff at such performance facilities has steadily increased since 2009 until it reached 12,669 in 2014, but the number markedly dropped in 2008, when the world came to be mired in the global financial crisis. These figures indicate that the number of employed staff at the South Korean performance facilities is largely influenced by the country’s overall economic situation.

It was discovered that the sales volume at the performance facilities has had a repeated increase-decrease pattern since 2010. The drop was particularly severe in 2014 (10%), in stark contrast to the steady growth in the number of performance facilities and employed staff in the same year. The revenue in the public sector moderately increased in 2014, but the sales in the private sector dropped by about 21% year-on-year. These figures suggest that the revenue of the private sector in South Korea is heavily influenced by the country’s economic situation whereas the public sector is assured of stable operation thanks to the scheduled performances and events.

표 2. 공연시설 매출액

Table. 2. Sales volume at the South Korean performance facilities

Criteria	2010	2011	2012	2013	2014	2014 Year-on-year growth	
						Growth amount (unit: KRW1M)	Growth rate (%)
Performance facility	327,441	316,711	377,169	414,204	368,890	△45,314	△10.9
Public	45,250	85,296	154,404	180,694	183,469	2,775	1.5
Private	282,191	231,416	222,765	233,510	185,421	△48,089	△20.6

Source: Census on Performing Arts 2015

표 3. 공연시설의 공연실적

Table. 3. Performance records at performance facilities

Criteria		2010	2011	2012	2013	2014	Year-on year growth rate in 2014
Performance facility	No. of performances	29,493	35,353	43,618	45,198	47,489	5.1
	No. of performance days	83,905	100,015	131,980	119,342	156,147	30.8
	Audience no. (unit: 1,000 persons)	23,767	30,265	35,319	39,657	37,668	△5.0

Source: Census on Performing Arts 2015

The numbers of performances, performance days, and repeat shows have steadily increased, but not the audience number. In particular, the number of performance days was about 156,000 days in 2014, a whopping 31% increase year-on-year. The audience number, however, has steadily increased since 2010 until 2013 before it dropped by 5% in 2014. The aforementioned decrease in sales revenue and audience number shows that in contrast to the apparent growth in the performance market, the overall profitability has been deteriorating.

## 2.2. Preceding Studies

The preceding studies that were analyzed for this study were divided into two groups: the studies on operational-efficiency improvement and those on return on investment. In a study on the operational-efficiency improvement, Kim Sae Jun (2008) analyzed the possible factors that should be considered when applying the government subsidy policy to the culture and arts sector by visiting relevant American cases. Seo Hye Rim (2010) analyzed the characteristics of the site selection of the cultural facilities scattered in Seoul based on statistical and GIS-based spatial analyses. The study results show that the number of cultural facilities increased in proportion to the overall population growth nationally, but not in Seoul. In addition, a negative correlation was found nationally between the urban cultural facilities and their financial self-reliance, indicating that the construction of urban cultural facilities increased despite such facilities' deteriorating financial self-reliance.

In his study on the investment performance of performance facilities, Park Kwang Guk (2003) analyzed the return on investment of cultural art centers using cost-benefit analysis. Chung Ji Young (2008) analyzed the construction and ordering process of regional cultural facilities by highlighting the process from the operational and architectural perspectives, respectively. The study results show that consulting services provided by

dedicated professionals will be necessary when developing a new performing art center, and that more studies are required on the construction of performing art centers through technology transfer in the long term.

The past relevant studies focused on two separate subjects: (1) operational-efficiency improvement and site selection from the public perspective; and (2) investment performance. As the improvement in the operational and site selection efficiency would positively influence the investment performance improvement, however, it is believed that more diverse factors should be comprehensively analyzed to ensure the optimal placement of performance facilities. Therefore, the problems in the current placement of regional performance facilities were identified in this study by reviewing their current state, and ways of selecting optimal sites were drawn up through the development of an integrated system.

## III. Problems in the Arrangement of Regional Performance Facilities in South Korea

### 3.1. Current state of regional performance facilities in South Korea

A brief look at the regional distribution of performance facilities in South Korea will show that 53% of all the facilities are located in the greater Seoul area, and that Gyeongsang province has a relatively high number of performance facilities (21%). Gangwon and Jeju provinces, with relatively smaller populations, account for 3 and 4% of the total number of performance facilities in South Korea, respectively. Chungcheong province, which has a bigger population than Jeolla province, accounts for a lower share of the national performance facilities, perhaps because Chungcheong province is small and relatively closer to the greater Seoul area.

A brief look at the number of seats per thousand people by region will show that Seoul and Gangwon provinces both have more seats than their respective population sizes (16.6 and 16 seats, respectively).

표 4. 지역별 공연시설 수

Table. 4. Number of performance facilities by region

Criteria	Nation	Seoul	Gyeonggi/Incheon	Gang-won	Chung-cheong	Jeolla	Gyeong-sang	Jeju
No. of facilities	1034	383	164	42	87	105	217	36
Share	100	37%	16%	4%	8%	10%	21%	3%

Source: Census on Performing Arts 2015

표 5. 인구천명 당 객석 수

Table. 5 Number of seats per 1,000 people

Criteria	Total no. of seats	Average no. of seats	Population	Per 1,000 people (seats)
Total	529,822	414	51,327,916	10.3
Seoul	168,205	357	10,103,233	16.6
Gyeonggi /Incheon	103,986	493	15,260,438	6.8
Gangwon	24,692	466	1,544,442	16.0
Chungcheong	53,483	505	5,329,140	10.0
Jeolla	55,438	430	5,253,224	10.6
Gyeongsang	102,156	377	13,230,093	7.7
Jeju	21,861	561	607,346	36.0

Source: Census on Performing Arts 2015

As the population of Gangwon province is substantially smaller than that of the other provinces in South Korea, however, it can be concluded that the seats of cultural facilities are being concentrated in the Seoul region. Specifically,

Gyeonggi/Incheon province and Gyeongsang province have many cultural facilities, but the number of seats per population is low in such regions. In addition, the number of cultural facilities in Chungcheong province is small, but the average number of seats per facility is large, suggesting that relatively large-scale cultural facilities were built in these regions, thereby making it difficult for the people living in the suburban areas to access such facilities. The number of seats per area was analyzed to identify the optimal arrangement of the public performance facilities in each region. The analysis results show that the performance facilities are more heavily concentrated in the Seoul region. There are 278 seats per 1 km<sup>2</sup> in Seoul City whereas there are less than 10 seats across all the provinces, with the exception of Jeju (12 seats), suggesting that a larger number of seats per area influences the utilization rate as it allows more people to access the facilities. The utilization rate again influences the financial self-reliance of the other cultural facilities, thereby pushing up the financial self-reliance of those regions with a higher utilization rate, with the exception of Gyeonggi/Incheon provinces.

### 3.2 Identified issues and measures for improvement

#### 1) Arrangement of optimal number of performance facilities by region

As discussed earlier, the country's performance facilities are excessively concentrated in Seoul City while those in the other provinces are struggling with low financial self-reliance due to their low utilization rates.

표 6. 면적당 객석수와 재정자립도

Table. 6. Number of seats per area and financial self-reliance

Region	Area	No. of seats per area	Utilization rate	Financial self-reliance
Total	100,291	5.28	67.4	52.5
Seoul	605	277.93	80.8	75.5
Gyeonggi /Incheon	11,183	9.30	58.9	33.1
Gangwon	16,874	1.46	46.5	42.6
Chungcheong	16,642	3.21	56.9	32.8
Jeolla	20,866	2.66	51.1	31.5
Gyeongsang	32,272	3.17	61.9	45.6
Jeju	1,849	11.82	100.8	56.6

Source: Census on Performing Arts 2015

In particular, the number of seats per area is very low across the country, with the exception of the greater Seoul area and Jeju, as the area factor was not considered in the construction of such cultural facilities, thereby making it highly inconvenient for the residents to access them. In addition, it is necessary to increase the number of performance facilities while minimizing the number of seats per facility in the provinces with a large area as there is a significant disparity in area size by province, but no such aspect has been considered to date. Therefore, it is necessary to come up with ways of estimating the site selection and required size of performance facilities by taking the area and population distribution of each province into account when placing performance facilities in the future.

#### 2) Development of province-specific performance programs

If the optimal placement of performance facilities concerns the aspect of hardware, the development of performance programs is also critical in terms of software because the optimal placement of performance facilities will be a necessary but insufficient condition for the improvement of the performance facilities' utilization rate and financial self-reliance. Therefore, it is necessary to consider the demographic and sociocultural characteristics of the facilities' potential users when developing performance programs optimized for each province. To achieve this goal, it will be necessary to determine and analyze the characteristics of the potential users by considering the seat occupation rate by performance type and the accessibility of the existing performance facilities in the neighborhood.

#### IV. Construction of a System for the Optimal Placement and Operation of Performance Facilities

##### 4.1 A system for the optimal placement of performance facilities by region

To ensure the optimal placement of performance facilities by region, it is necessary to analyze the population distribution and accessibility of the target areas. In particular, those provinces with a larger area compared to the given population size should reduce the size of their performance facilities but increase their number, thereby enabling access to the cultural facilities from a larger area. If there is a performance facility in the neighboring area, the construction of a new cultural facility will lower such facility's overall efficiency because it will distribute the potential audience to the two facilities rather than increasing the actual number of users of the facility. Therefore, the database for analysis should incorporate the following information: the sites and sizes of the existing facilities, and their utilization rates. The information collected as such can be used to calculate the optimal site and size through the use of the huff or hedonic model, while the site selected as such can be fed to the database again for future analysis.

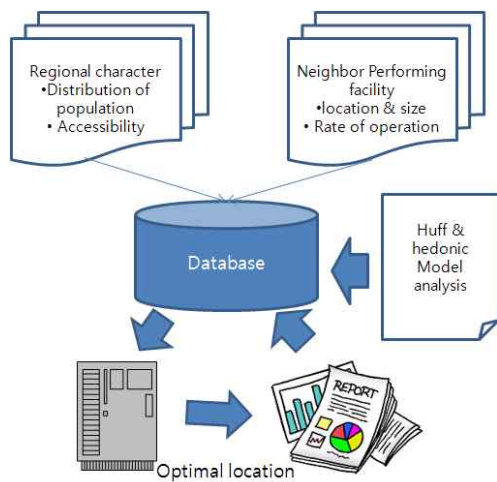


그림 2. 공연시설 적정 배치모형의 개념  
Figure. 2. Concept of optimal placement of performance facilities

##### 4.2 System for the selection of the optimal performance type

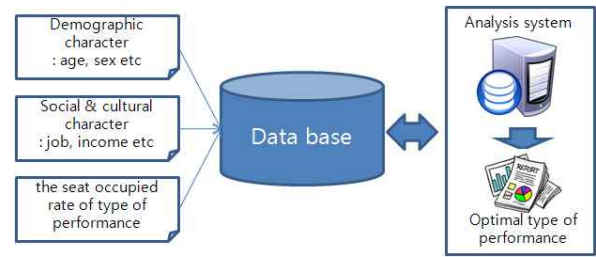


그림 3. 공연유형 적정 선택모형의 개념  
Figure. 3. Concept of selection of optimal performance type

If there is a population distribution and accessibility issue regarding the optimal site of a performance facility, the optimal performance type is related with the demographic and sociocultural characteristics. Two regions with similar population distribution patterns will prefer different performance types depending on the people's age, gender, occupation, and income levels. The Census on Performing Arts classifies a performance as an act, musical, dancing, ballet, Western music, or opera. As such, the database for analysis should incorporate the demographic and sociocultural variables as well as the seat occupation rate depending on the performance type if such performance was held in the neighboring area, thereby enabling the selection of the most appropriate performance type for the region. The performance type selected as such will be compared with the actual outcome before it is fed back to the database for use in the expected future decision-making.

#### V. Conclusions and Implication

The South Korean people are increasingly interested in cultural entertainment, including acts and musicals, with their rising income level. It is said, however, that insufficient performance facilities have been constructed in South Korea, and that the existing performance facilities in the country are not arranged rationally. Based the results of this study, the current placement of cultural facilities in the country was done without rationally considering the characteristics of the regions where such facilities were to be built, and consequently, such facilities have low utilization rates and financial self-reliance, with the exception of Seoul.

Therefore, to address such problem, a system for the optimal placement of performance facilities was developed in this study. Such system works as follows. The accessibility levels, sizes, and utilization rates of the neighboring cultural facilities as well as the population distribution of the region where such cultural facilities are located are inputted in the database. The inputted data are then



processed using a statistical method to determine the optimal site selection and size. As the ultimate goal of this study was to improve the utilization rate and financial self-reliance of performance facilities, a method of developing a system that can calculate the optimal performance type was also devised. If the demographic and sociocultural variables of a specific region are being inputted in the database and analyzed along with the utilization rates by performance type, it will be possible to come up with a performance type that is optimized for the given region. As the present performance facilities in South Korea are putting pressure on the South Korean government due to their low financial self-reliance but do not provide high satisfaction, their operational efficiency must be improved through continuous studies in the future.

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## Reference

- [1] S. Kim, "An Evaluation of the Equity of Grant Allocation to Each State", *The Journal of Cultural Policy*, Vol. 20, pp. 126-147, November 2008.
- [2] G. Park, U. Do, H. Ju, "Investment effect analysis of public cultural facilities construction", *Korean Public Administration*, Vol. 15 No. 4, pp. 937-952, December 2006.
- [3] J. Chung, "A study on the Construction Planning and Delivery Methods to Improve Local Cultural Facility", *The Journal of Korea Community Development Society*, Vol. 33 No. 3, pp. 63-69, December 2008.
- [4] K. Park, "A study on Adolescents' Daily Leisure Activities and Use of Cultural Facilities", *The International Journal of Culture and Tourism Research*, Vol. 8 No. 1, pp. 7-24, June 2006.
- [5] H. Seo, G. Kim, "The Study for Location Characteristics of Urban Cultural Facilities in Seoul", *The Korea Regional Development Association autumn symposium*, pp. 139-153, October 2010.
- [6] E.Y. Hur, "A Study on the Efficiency Indicators of the Cultural Institutions", *Korea Cultural & Tourism Institute*, June 2010.
- [7] E. Lee, Y. Chung, "Study On the Proper Management System for the Regional Arts Center in Korea", *The Study of Arts Management*, Vol.17, pp.85-110, October 2010.
- [8] Y. Kim, "An Effect of Brand Power of Arts Center on Ticket Purchase Behavior", *The Study of Arts Management*, Vol.22, pp.29-58, May 2012.
- [9] S. Kim, "Relationship between the Service Quality of Dance Performance Halls and Satisfaction with Performance Halls as well as re-spectating", *Journal of The Korea Contents Association*, Vol. 11 No. 8, pp. 150-158, August 2011.
- [10] H. Jin, S. Kang, "Market Segmentation for Culture Facilities According to Culture Consumption Pattern and Lifestyle", *Review of Culture & Economy*, Vol. 15, No. 2, pp. 79-101, August 2012.
- [11] J. Lee, J. Kwon, "Error Correction Scheme in Location based AR System Using smart phone", *Journal of Digital Contents Society*, Vol. 15, No. 2, pp. 179-187, April 2015.
- [12] J. Seo, J. Lee, "A Study on Building of Cultural Facilities by Corporate Culture Marketing - Focusing on Musical Exclusive Theater in Seoul", *Academic association of global cultural contents*, Vol 18, pp. 45-68, February 2015
- [13] M. Ko, C. Lim, "Basic Research on Guidelines of Performance Facility Construction Project", *Journal of the Architectural institute of korea Planning & Design*, Vol. 24, No. 6, pp. 125-136, June 2008
- [14] K. Kwon, S. Yoon, "Study on the Activation Plan Using Specific Cultural Cluster", *Journal of The Korea Contents Association*, Vol. 14, No 10, pp. 776-787, October 2014
- [15] Ministry of Culture, "Sports and Tourism, Survey on The Performing Art". December 2015



Woo-Young Song

2002 : Berklee College of Music Jazz Composition (BA major)

2005 : University of Massachusetts Amherst Jazz Composition & Arrangement (MA major)

2009~present: Department of Music Ministry in Korea Nazarene University

\* Interesting Area : Performing Facility, Optimal location, Decision Making System