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The Impact of Exhibition Resources on Development of City MICE Industry

An Empirical Study Based on Data From 175 Cities in China

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***Abstract*—It is of great practical significance to explore the impact of exhibition resources on development of city MICE industry. Taking 175 Convention and exhibition cities in China in 2017 as the research sample, the empirical analysis results show that exhibition resources have a significant positive impact on development of city MICE industry; and the elements of exhibition resources, number of exhibition halls, exhibition areas and service level, has a significant positive impact on development of city MICE industry. These effects range from big to small in turn, service level, exhibition areas and number of exhibition halls. These results clarify the positive impact of exhibition resources on development of city MICE industry, and identify the relative importance of the elements of exhibition resources, which provides the relevant managers some management references to strengthen the use of exhibition resources and enhance development of city MICE industry.**

Keywords—MICE industry; Exhibition resources; Service level; Exhibition areas; Number of exhibition halls

I. INTRODUCTION

MICE economy, as a new economic form, plays a more and more important role in the development level of national economy. It can not only promote the local economic development, promote regional industrial agglomeration, but also promote the development level of the city, and improve the city's popularity and reputation [1]. The exhibition hall, as a modern, cultural, interactive tidal flat, with its important carrying capacity, has gradually become a basic condition for development of city MICE industry. Studies have shown that exhibitors and spectators' choice of exhibitions is closely related to the construction of exhibition halls, supporting facilities and service level [2-3], which makes the attraction between exhibitors and exhibitors have distinct resource-oriented characteristics. Based on the previous studies, this paper defines the exhibition hall resources as a collection of tangible and intangible resources that can attract exhibitors and spectators and facilitate exhibitions, conferences, festivals and other activities, such as its own buildings, ancillary buildings, supporting facilities and equipment, and its operation services [4-5].

At present, the most important issue in development of city MICE industry is the integration and utilization of resources in China [6]. So, what kind of role does exhibition resources play in development of city MICE industry all over the country? What is the key to development of city MICE industry? In the past, researchers used more qualitative research methods to explore the role of exhibition resources on the MICE industry. Liu Minkun [7] put forward the green management theory framework of exhibition industry from the perspective of exhibition venues. Luo Qiqi [8] pointed out that the great contrast between the number of venues and the utilization rate may lead to the unbalanced and uncoordinated development of the exhibition industry. It is worth pointing out that their study objects are mainly concentrated in Beijing, Shanghai and other eastern coastal cities [9]. Based on the resource-based theory, this paper empirically analyzes the relationship between the exhibition resources and development of city MICE industry, and explores the key elements of the exhibition resources that affect development of city MICE industry. The results will further clarify the relationship between exhibition resources and development of city MICE industry, and identify the relative importance of the elements of exhibition resources, so as to provide some management references for the relevant managers to strengthen the utilization of exhibition resources and effectively improve development of city MICE industry.

The remainder of the paper is structured as follows. In the next section, we adopted the resource-based theory to construct our model and develop our hypotheses. The empirical study is then discussed and the data analysis reported. After that, we discuss the results of hypothesis tests. Finally, we discuss the theoretical and empirical implications of our findings.

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II. METHODS

To scientifically measure the impact of exhibition resources on development of city MICE industry, it is necessary to select scientific indicators to measure exhibition resources. The resources of the exhibition hall (exhibition resources) involve too much content in a city that includes not only tangible objects such as buildings, infrastructure, supporting equipment, but also space layout, management and operation, service and other attracting factors. That is to say, it is quite difficult to accurately measure the impact of exhibition resources.

For this reason, this study takes into account the objectivity, integrity, data availability and representativeness in the selection of indicators, and finally determines number of exhibition halls [10], exhibition areas and service level as explanatory variables. Among them, the service level of the exhibition hall (service level) is measured by the total number of UFI (Union of international Fairs, UFI) members and certification projects, IAEE (International Association of Exhibitions and Events, IAEE) members and certification projects, because UFI and IAEE have stricter service quality requirements for the application and certification of members and projects. In addition, this paper also adds the number of government departments in charge of urban MICE industry as a control variable to distinguish the impact of government support on development of city MICE industry.

The resource-based theory was put forward by Rumelt and Wernerfelt in 1984 [11]. The theory holds that firms have different tangible and intangible resources, which can be transformed into unique capabilities, and these unique resources and capabilities are the source of sustainable competitive advantage. Nowadays, every city in China has taken advantage of exhibition hall resources to form its own capabilities, and utilize these resources and capabilities to continuously promote the development level of its own city MICE industry. In this study, the number of exhibitions, exhibition area, exhibition items (area) listed in TOP100 and the number of TOP3 classified by industry were taken as the primary indicators for calculating the development level of the city's exhibition industry (dependent variable), and each indicator was given different weights according to the method in the China Exhibition Data Statistical Report 2017. Finally, we calculate the index to measure development of city MICE industry. The sample of this study is 175 exhibition cities in China in 2017. The data mainly come from China Exhibition Data Statistical Report 2017, the official website of the International Association of Exhibitions (UFI) and the official website of the International Association for Exhibitions and Projects (IAEE). In summary, the model is set as follows:

$$y = C + \alpha ER + \lambda CO + \mu \quad (1)$$

$$y = C' + \alpha' EN + \beta EA + \theta SE + \lambda' CO + \mu' \quad (2)$$

In these equations, Y represents development of city MICE industry, ER represents the exhibition resources, EN represents number of exhibition halls, EA represents the indoor exhibition area of one exhibition hall, SE represents the service level of international service level of exhibition hall, CO represents the control variables.

The corresponding research hypotheses are as follows:

H1: Exhibition resources have a significant positive impact on development of city MICE industry.

H1a: Number of exhibition hall, an element of Exhibition resources, has a significant positive impact on development of city MICE industry.

H1b: Exhibition areas, an element of Exhibition resources, has a significant positive impact on development of city MICE industry.

H1c: Service level, an element of Exhibition resources, has a significant positive impact on development of city MICE industry.

III. ANALYSIS AND RESULTS

A. Correlative Analysis

Using Stata 14.0 software, the Spearman correlation coefficients between the indicators were calculated to measure the degree of their close links. As shown in Table I, the correlation coefficients between development of city MICE industry and number of exhibition halls, exhibition areas, service level and the government support were 0.625, 0.731, 0.578 and 0.708 in turn, which were all above 0.5, showing a significant positive correlation at the medium level ($P < 0.05$). The above analysis shows that number of exhibition halls, exhibition areas, and service level and government support are closely related to development of city MICE industry.

TABLE I. THE RESULTS OF SPEARMAN CORRELATION[a]

	Development level	**Number of exhibition halls**	**Exhibition areas**	**Service level**	**Government support**
Development level	1.000	0.625**	0.731**	0.578**	0.708**
Number of exhibition halls	0.625**	1.000	0.807**	0.433**	0.561**
Exhibition areas	0.731**	0.807**	1.000	0.557**	0.630**
Service level	0.578**	0.433**	0.557**	1.000	0.598**
Government support	0.708**	0.561**	0.630**	0.598**	1.000

[a] *** p<0.01, ** p<0.05, * p<0.1

B. Regression Analysis

1) Exhibition resources and development of city MICE industry: In order to explore the relationship between exhibition resources and development of city MICE industry, development of city MICE industry is regarded as a dependent variable, the exhibition resources as an independent variable, and the government support as a control variable (1). Then, the ordinary least squares regression was employed to analyse. It is noted that the data of exhibition resources come from the sum of three indicators that are number of exhibition halls, exhibition areas, and service level.

As shown in Table II, R-square is 0.726, which indicates that the sample data fits well with the model; the normalized

regression coefficient of exhibition resources is 0.852, and P < 0.001, which indicates that exhibition resources have a significant positive impact on the level of urban exhibition development.

In addition, after adding government support as a control variable into the regression model, R-squared changed to 0.726, which improved the fitting of the model. At this time, the influence of control variables on development of city MICE industry is significant (standardization coefficient is 0.195, P < 0.001), and the results of the significant impact of exhibition resources on development of city MICE industry have not changed (standardization coefficient is 0.741, P<0.001), which indicates that our regression results are relatively robust.

TABLE II. REGRESSION RESULTS

Model 1	**Non-standardized coefficient**		**Standardized coefficient**	
		Add CO		**Add CO**
Exhibition resources	1.453***[a]	1.264***	0.852***	0.741***
	(0.0679)[b]	(0.0790)	(0.0398)	(0.0463)
Government support		4.866***		0.195***
		(1.159)		(0.0463)
Constant	-0.727	-3.324*	1.41e-09	1.27e-09
	(1.782)	(1.811)	(0.0397)	(0.0379)
Observations	175	175	175	175
R-squared	0.726	0.752	0.726	0.752

[a] *** p<0.01, ** p<0.05, * p<0.1

[b] Standard errors in parentheses.

2) exhibition resource elements and development of city MICE industry: On the basis of relevant analysis, we make a regression analysis to further verify the relationship between the index of exhibition resources and development of city MICE industry. It is noted that development of city MICE industry is a dependent variable, number of exhibition halls, exhibition areas and service level are independent variables, and government support is still a control variable (2).

As shown in Table III, without adding control variables, R-squared is 0.736, which indicates that the sample data fits well with the model. The normalized regression coefficients of number of exhibition halls, exhibition areas, and service level are 0.170, 0.321 and 0.503 and P<0.001, which indicates that number of exhibition halls, exhibition areas, and service level all affect development of city MICE industry significantly, and the most influential indicator is service level. This result supports the resource-based theory that if exhibitors and related departments want to gain competitive advantage, they should not only have complete infrastructure, but also have special heterogeneous resources - high quality of service. What's more, the effect of the exhibition area on development of city MICE industry is greater than number of exhibition halls, which indicates that the city should pay more attention to the design of pavilions than to the construction of pavilions in order to improve the utilization of exhibition halls.

TABLE III. REGRESSION RESULTS

Model 2	**Non-standardized coefficient**		**Standardized coefficient**	
		Add CO		***Add CO***
Number of exhibition halls	3.738***[a] (1.188)[b]	2.083* (1.199)	0.170*** (0.0540)	0.0946* (0.0544)
Exhibition areas	0.960*** (0.203)	0.816*** (0.197)	0.321*** (0.0680)	0.273*** (0.0659)
Service level	1.821*** (0.195)	1.719*** (0.187)	0.503*** (0.0538)	0.475*** (0.0518)
Government support		5.145*** (1.212)		0.206*** (0.0484)
Constant	-2.035 (2.291)	-2.671 (2.190)	8.77e-09 (0.0392)	7.95e-09 (0.0373)
Observations	175	175	175	175
R-squared	0.736	0.762	0.736	0.762

[a] *** p<0.01, ** p<0.05, * p<0.1

[b] Standard errors in parentheses.

In addition, the R-squared was 0.762 when the control variables were added to the regression model, and the fitness of the model was improved. The influence of the control variables on development of city MICE industry was significant (standardization coefficient was 0.206, P < 0.001), and the results of the significant impact of exhibition resources on development of city MICE industry have not changed(The standardization coefficients of number of exhibition halls, exhibition areas, and service level are 0.0946, 0.273 and 0.475, The regression results without adding control variables have little change, and P <0.001), which indicates that our regression results are relatively robust.

IV. ASSUMED TEST RESULTS

The analysis results show that our two models have been verified effectively, and four hypotheses, summarized as shown in Table IV, are significantly supported. We can see that the service level has greater impact on development of city MICE industry. The number of exhibition halls has the least influence on development of city MICE industry.

TABLE IV. RESULTS OF HYPOTHESIS TESTING

Assumption	**the regression**	**coefficient conclusion**
H1: Exhibition resources have an significant positive impact on development of city MICE industry.	0.852	support
H1a: Number of exhibition hall, an element of Exhibition resources, has an significant positive impact on development of city MICE industry	0.170	support
H1b: Exhibition areas, an element of Exhibition resources, has a significant positive impact on development of city MICE industry.	0.321	support
H1c: Service level, an element of Exhibition resources, has a significant positive impact on development of city MICE industry.	0.503	support

V. CONCLUSION

Exhibition resources have a significant positive impact on development of city MICE industry. Specifically, number of exhibition halls, exhibition areas, and service level, the

elements of exhibition resources, have a significant positive impact on the level of urban exhibition, the impact from large to small is the level of service, expandable area, number of exhibition halls. It is noted that government support as a control variable also has a significant positive impact on development of city MICE industry.

These results clarify the positive impact of exhibition resources on development of city MICE industry, and identify the relative importance of the elements of exhibition resources. Relevant managers can make good use of these findings and constantly strengthen the use of exhibition resources in order to effectively enhance the level of development of the MICE industry in their cities.

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