

STATISTICAL EVALUATION OF PERFORMANCE OF VILLAGE-LEVEL PUBLIC CULTURAL ACTIVITY CENTERS AT THE GUANGXI ZHUANG AUTONOMOUS REGION

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The Likert scale method is applied to satisfaction evaluation for Chinese rural cultural life. Various levels of indicators are designed and the Analytic Hierarchy Process (AHP) is then used to measure the level of the public cultural management effectiveness of the government, find problems and provide a basis for the government to formulate policies. The survey data from the Guangxi Zhuang Autonomous Region in July 2016 are used in this study.

INTRODUCTION

With the Chinese government's emphasis on rural cultural life, evidence-based evaluation and decision-making has been becoming more and more important to the government. Government performance evaluation is an important tool of government reform under the guidance of the theory of "new public management" in western countries since the seventies of the twentieth century. Since the late 1990s, all levels of Chinese government have shifted their focus to the assessment of economic objectives and appraised modes to the comprehensive dynamic performance evaluation track of social development. In the field of public cultural services, the government is in a dominant position. Apart from investing in infrastructure for public welfare undertakings, the government is also responsible for upgrading service levels, innovating products, and reforming mechanisms and systems. Therefore, the use of performance appraisal can continuously improve the administrative efficiency of all levels of government, mobilize and guide all forces into public cultural services, and better protect the basic cultural rights and interests of the public.

The key to performance evaluation is to establish evaluation models and methods to calculate and analyze the evaluated objects and scientifically analyze the relationship between input and output. The main domestic assessment methods are the Analytic Hierarchy Process (AHP), Balanced Scorecard, Data Envelopment Analysis (DEA), Fuzzy Evaluation, and Key Performance Indicators. Regarding the performance evaluation of public cultural services, Chinese researchers generally believe that the "government-dominated-public evaluation" evaluation model should be established based on citizen demand and public satisfaction. Li and Yu (2009) also proposed "Hosting by Non-Governmental Organizations - Public Participation", a new model that is presided over by organizations and agencies outside the government. Su et.al (2016) constructed a public-oriented public cultural service performance evaluation system from the three dimensions of public cultural facilities, activities, and service management. Each dimension includes objective statistical indicators and public satisfaction indicators. Specifically, in terms of performance evaluation of rural public cultural services, Li (2009) discussed the theoretical orientation of rural public cultural service performance evaluation. Li and Yu (2009), starting from the perspective of public governance, discussed the impact of public governance on the performance evaluation of rural public cultural services, and put forward the model and index system of rural public cultural service performance evaluation. Zhang (2012) explained the incompleteness of the rural public cultural service performance evaluation system, imperfect mechanisms and low efficiency, and put forward suggestions for improvement.

Rural culture has always been the top priority in the construction of Chinese culture. Under the condition of the "hollowness", which is created by the relatively backward rural economic development in China and the massive transfer of labor force to the cities, the rural cultural market is underdeveloped, and the construction of rural culture mainly relies on the construction of grassroots public cultural service system implemented by the government.

The village-level public cultural activity center is the main front of the country in a rural cultural construction. The construction of a village-level cultural activity center is the basic project concerning people's livelihood and the fundamental guarantee for the basic cultural rights and interests of peasant masses. In recent years, the Chinese government has issued a series of policies to support public cultural construction. The investment in a grassroots public cultural service

system has been gradually increasing in terms of projects, funds and personnel training. According to the requirements of full coverage and standardization, the government departments of all levels have speeded up the construction of village-level public cultural activity centers, paid attention to the cultural life of the grass-roots people and vigorously promoted the development of rural cultures.

To evaluate the construction performance of village-level public cultural activity centers, we constructed a set of evaluation systems according to the function and social evaluation of the activity centers and used the Likert scale to measure the satisfaction degree. Then, we selected some indicators and applied Analytic Hierarchy Process (AHP) (Mu & Pereyra-Rojas, 2017) to calculate the government's effectiveness in public culture management and identify management problems accordingly to provide evidence for the government to formulate policies. In the following section, the article discussed the statistical evaluation of the service performance of village-level public cultural activity centers in Guangxi Zhuang Autonomous Region (hereinafter referred to as Guangxi) in July 2016.

SELECTION OF SAMPLES IN MULTISTAGE CLUSTER SAMPLING

The four cities of Fang Chen Guang, Baise, Laibin and Guilin, which are both very local and representative, in the eastern, central and western regions were selected as the observation areas. The thirty-eight administrative villages in the fifteen towns of the four cities were selected as specific research sites. We considered making the selections evenly distributed, representative, objective and profound observations of the basic situation of grass-roots public cultural service system in Guangxi. In the survey, a total of 1434 questionnaires from rural residents were collected.

Methods and Processes

The survey adopted the "sub-regional classification random sampling" questionnaire and was designed for residents. The questionnaire covered the basic information of villagers, village-level public cultural centers, villagers' evaluation of the public cultural centers, the villagers' evaluation of cultural activities in rural areas and their opinions and expectations on village-level public cultural centers. Each questionnaire was filled out in the field under one-on-one guidance by investigators. The results of the survey were analyzed with the help of the R software. At the same time, structured interviews were conducted to compensate for the shortcomings of the questionnaire so that a comprehensive collection of real first-hand information could be obtained.

DATA ANALYSIS

The goal of this research is to provide the answers on achievements made by Guangxi village public cultural centers, problems existing in the construction of Guangxi village-level public cultural activity centers, cultural needs of rural residents in Guangxi and Guangxi villagers' satisfaction with village public cultural centers.

Satisfaction evaluation of public cultural services helps the government clarify its own functions, understand the problems in service, and establish a continuous service quality improvement mechanism. Therefore, the villagers' satisfaction analysis of village-level public cultural centers is of great significance for improving the status of rural cultural facilities, perfecting the construction of village-level public cultural centers, realizing and safeguarding the spiritual and cultural rights and interests of farmers and promoting the coordinated development of rural economy and society.

OVERALL SATISFACTION

The evaluation system consists of the twenty third measurement indicators included in the three dimensions of environment, facilities and equipment, and service contents (Table 1). The five-point Likert scale was used to measure the subjects' satisfaction with village-level public cultural services. The answers were divided into five categories: "Very Satisfied" (or 5), "Satisfied" (4), "General" (3), "Unsatisfactory" (2) or "Very Dissatisfied" (1), and the statistical results are listed in Table 1. Overall, the villagers are satisfied with the cultural activity venue environment (at

a score of 4), but the government needs to improve on the facilities, equipment and services of the cultural activity centers.

Table 1. Index Scores of Satisfaction Evaluation on Village-level Cultural Activity Centers

Goals	First-level Indicators	Second-level Indicators	Satisfaction Ratings		
			Average (total)	Overall Score	Order
Public Satisfaction Indicators	Activities Venue Environment	Overall appearance and environment	4.1 (1419)	4	1
		Beautiful environment, clean and tidy	4.1 (1421)		
		Activities venue layout	3.98 (1417)		
		Area size of activity sites	3.9 (1423)		
		Location selection	3.92 (1416)		
	Facilities and Equipment	Functional rooms such as books and multi-purpose rooms, training rooms, etc.	3.09 (1426)	2.77	3
		The number of books	3 (1422)		
		The accessibility to e-reading rooms	2.39 (1423)		
		*		
	Service Contents	Open on schedule	3.71 (1431)	3.15	2
		Art counseling and training on art	2.97 (1429)		
		Exhibitions and seminars	2.76 (1415)		
		*		

ANALYSIS OF VARIANCE

Villagers of different ages may have different aesthetic and cultural interests, thereby contributing to various satisfaction ratings with village-level public cultural activity centers. Part of the results of the variance analysis to the data of the 1434 questionnaires are displayed in Table 2. Different ages of villagers present significantly different satisfaction evaluations of “beautiful environment, clean and tidy” and “activities venue layout” indicated by the significance values of less than 5% (Table 2). In comparison, old or young people all have a similar opinion on “overall appearance of the environment” verified by no statistically significant difference (7%).

Table 2. ANOVA on Subjects’ Age on Satisfaction Measures of Cultural Activity Centers

	SS	df	MS	F	Significance
Overall appearance of the environment	16	3	2.36	5.25	0.070
Beautiful environment, clean and tidy	23.8	3	3.60	7.92	0.013
Activities venue layout	21	3	3.07	7.15	0.027

TREND ANALYSIS OF AGES’ IMPACT ON SATISFACTION EVALUATION

According to the trend analysis, the villagers of all ages have the highest satisfaction with the indicators of both "beautiful environment, clean and tidy" and "activities venue" (Fig. 1) and then are happy with “staff services” as shown by a score of greater than 3. The fact that the villagers are not satisfied with the accessibility to E-reading rooms, the number of computers and

Broadband internet speed (only around 2.5 out of 5 scores) suggests what the government needs to focus on in the coming years; although, it is understandable because these high technologies of E-reading, computers and internet are relatively more expensive projects than the other three categories.

Within each of the three groups of “beautiful environment”, “clean and tidy” and “place of activities”, there is a trend that village of 40 years or older have higher satisfaction than the younger people. In contrast, the villagers younger than 40-years old express a greater satisfaction with electronic reading rooms and computer networks than older people. These results indicate that younger people may have higher requirements on beautiful environment, good activity sites and services, while older people may need more training on the high technologies. They also suggest that the younger generation of villagers is more willing to accept new things and is the major force in the demand for rural internet culture.

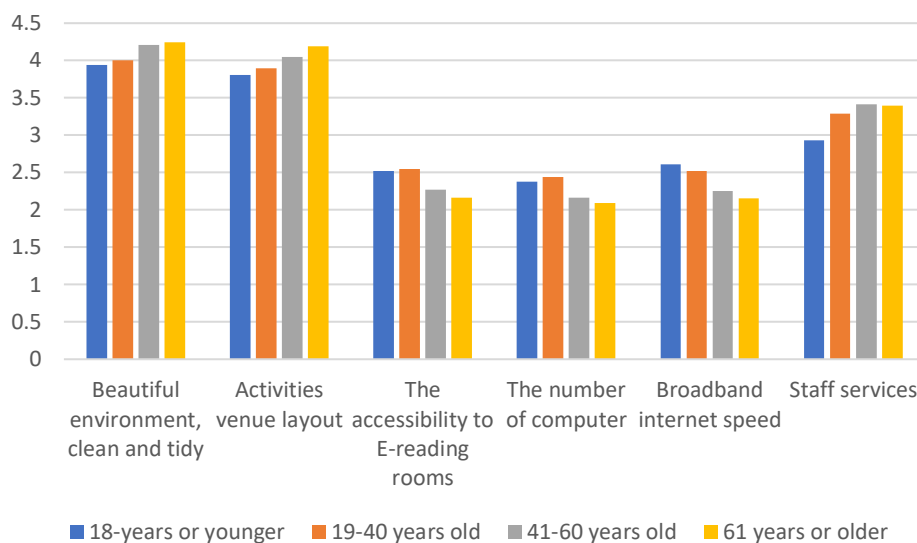


Figure 1. Trend analysis of satisfaction vs villager’s ages

PERFORMANCE EVALUATION OF THE GUANGXI VILLAGE-LEVEL PUBLIC CULTURAL ACTIVITY CENTERS

Selection of Evaluation Indicators

The four cities of Fang Chen Guang, Baise, Laibin and Guilin were selected as sample survey sites to evaluate the performance of the Guangxi rural public cultural activity centers. To make the evaluation more accurate, the residents' satisfaction, acceptance and enthusiasm of the centers were subdivided into six indicators: the environment of the centers, books and sports facilities and equipment, computer network facilities, services and cultural activities, resident acceptance of cultural activities center and residents' enthusiasm for participation. The five-point Likert scale was used to measure the environment of the centers, books and sports facilities and equipment, computer network facilities, services and cultural activities, where the investigation results were scaled with "Very satisfied" (or 5), "Satisfied" (4), "General" (3), "Unsatisfactory" (2) or "Very dissatisfied" (1). The 6 scales of "greatest degree" (6), "greater degree" (5), "general" (4), "less degree" (3), "least degree" (2) and “not sure” (1) were used to measure the residents’ recognition of the centers and enthusiasm in participating in the activities of the centers.

Data Processing

Thirty-eight village-level public cultural activity centers were grouped into four levels. The arithmetic mean of each measure indicator of each level was calculated to evaluate the performance of the centers (Table 3).

Developing a model

Deriving Priorities (Weights) for the Criteria. Not all the criteria will have the same importance. The structural judgment matrix method is used to determine the weight of each index, and the relative importance of the quintiles is used as a measure of scale. By comparing the importance of the indicators between the indexes, the scoring rules are listed in Table 4.

Table 3- Four Performance Indicators, Evaluation Score Sheet

Area	Indicators				
	Center Environment	Book & sports facilities	Residents' recognition	Participation	Computer network facilities
FangChenGuang	3.13	2.46	3.99	3.28	2.22
Baise	3.62	2.61	4.21	3.73	1.88
Laibin	4.35	3.49	4.79	4.06	2.72
Guilin	3.93	2.67	4.09	3.66	1.75

Table 4 Weight Rating Rules Table

Indicators 1 vs 2	Extremely Important	Strongly Important	Significantly Important	More Important	Important	Less Important	Unimportant	Very Unimportant	Extremely Unimportant
Indicator 1 Evaluation	9	7	5	3	1	1/3	1/5	1/7	1/9

Note: When the values are 8, 6, 4, 2, 1/2, 1/4, 1/6, 1/8, the median of the above evaluation values.

Through the weighted scoring rules, a judgment matrix (Table 5) is constructed for the service performance of rural public cultural activity centers in the four cities in Guangxi. The weight coefficients are from high to low as follows: building environment, services, book & sports facilities, and residents' recognition, participation and computer network facilities.

Table 5. Weighting Factor Matrix for Performance Evaluation of Village-level Public CAC

	Building Environment	Services	Book & Sports facilities	Residents' recognition	Participation	Computer Network Facilities
Building Environment	1	2	3	6	7	9
Services	1/2	1	2	5	6	7
Book & Sports facilities	1/3	1/2	1	2	3	4
Residents' recognition	1/6	1/5	1/2	1	2	3
Participation	1/7	1/6	1/3	1/2	1	2
Computer Network Facilities	1/9	1/7	1/4	1/3	1/2	1

Calculations of Consistency Index CR. R software programming is used to calculate Consistency Index CR and the results were described as follows:

$\lambda_{max} = 6.1017$, $CI = 0.0203$, $CR = 0.0164$. Since this value of 0.006 for the proportion of inconsistency CR is less than 0.05, we can assume that the weighted matrix is reasonably consistent for processing of decision-making using AHP.

Compute overall Scores. Because the highest score for the residents' recognition and participation is 6 while the score is 5 for the other four indicators, it would be inappropriate to directly apply the weights of the indicators to the calculations of overall ratings. Therefore, the overall ratings are calculated with a linear method of: $S_i = \sum_{j=1}^m W_j Z_{ij}$, where S_i - Overall score of the i^{th} site, Z_{ij} - Section score of the j^{th} indicator at the i^{th} site, and W_j - Weighting factor of the j^{th} indicator. The calculation results as presented in Table 6.

Table 6. Overall Scores of Performance Evaluation of Village-level Public CAC at four Investigated Cities.

	FangChenGuang	Baise	Laibin	Guilin
Score	2.90	3.15	3.93	3.26
Ranking	4	3	1	2

CONCLUSION

The Likert scale method is successfully applied to satisfaction evaluation for Chinese rural cultural life. Overall index scores of satisfaction evaluation indicate that villagers are satisfied with cultural activities venue environments (at a score of 4), but the government needs to improve on the facilities, equipment and services of the cultural activity centers.

Based on the overall scores of the performance evaluation, it is concluded that Laibin stands out with the best village-level public cultural activity centers and Fang Chen Guang with the lowest overall score needs improvements in the establishment and management of the cultural activity centers.

REFERENCES

- Li, N. (2009). Study on the construction of rural public cultural service performance evaluation mechanism. *Journal of Ningxia University: Humanities and Social Science Edition*, 6, 181.
- Li, S., & Yu, J. (2009). Public management performance evaluation of rural public culture in China from the perspective of public governance. *Books and Information*, 6, 53.
- Mu, E., & Pereyra-Rojas, M. (2016). *Practical Decision Making: An Introduction to the Analytic Hierarchy Process (AHP) Using Super Decisions* (Vol. 2). Springer.
- Su, X., Zhou, C., & Zhang, H. (2016). Performance evaluation of "public-oriented" public cultural service: theoretical basis and index system. *Heilongjiang Social Sciences*, 5, 85-90.
- Zhang, N. (2012). Deficiency and improvement of performance evaluation of rural public cultural services—Based on the investigation of township cultural stations in Jiangsu province. *Journal of Hunan Agricultural University (Social Science Edition)*, 6, 50-52.