The Expenditure Efficiency of Museum Service and Optimization Approaches -- A case from Hubei Provincial Museum, China

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Abstract: In the public cultural service industry, museums are endowed with irreplaceable importance and diverse functions. The government, the main infrastructure director, has invested heavily in public services at museums to increase people's satisfaction with public service and improve the construction of public cultural facilities. Nevertheless, the economic and social benefits created are found difficult to quantify. The results from past research have shown that the project selection as well as design of museums has a certain impact on tourist experience and degree of satisfaction, thus somewhat reflecting the project performance and mirroring the investment efficiency of a museum. This paper takes Hubei Provincial Museum as research object, analyzes its project expenditure structure and project performance from the perspective of socioeconomics, measures the effectiveness of museum expenditure on each category of projects by assessing public satisfaction, and finally puts forward several advice to raise expenditure efficiency for today's general museums.

Keywords: Investment Efficiency; Museum Projects Portfolio; Expenditure Balance

1. Introduction

Being a public cultural space, museums are multi-functional places with incredibly high standards of humanistic connotation and aesthetic value. With the existence of economy and social prosperity, the quality demand for public cultural service around the world has been getting increasingly higher. In recent years, Chinese have paid rather more attention to the quality of public service provided by culture-related infrastructure, in particular, the museums. Therefore, for domestic museums, "how to optimize each important projects through reasonable capital injection to upgrade public services which are reckoned to contribute a lot to tourist absorption and public satisfaction enhancement" has been rated the key issue that museums are now facing.

As far as the expenditure of public service is concerned, existing research in China put more emphasis on the assessment and measurement of all governmental projects invested. While sound analysis on specific, segmented programs is hardly found. At the same time, corresponding research results come up outside China is quite plenty. In this case, the idea and methodology overseas are considered helpful as a key reference for a more accurate and practical measurement of museum expenditure efficiency on its public service programs.

2. Measurement and Data Collection

2.1 Measurement of Expenditure Efficiency

For the measurement of the efficiency of governmental public spending, Data Envelopment Analysis (DEA) [1], Stochastic Frontier Analysis (SFA) [2] are applied. While the quantification of social rewards to museums is seldom demonstrated in IPMA model, which is universally used for evaluating employees' satisfaction and performance. This essay aims to assess the actual social rewards of each program provided to the public by the museum based on the heart of methodology of IPMA Model.

2.2 Measurement Tools

2.2.1 IPMA: A Performance Assessment Model

Importance-performance matrix analysis (IPMA) is a practical and self-explanatory performance evaluation model. Through the quadrant diagram, the key problems are proved to be found out in short time to define the priorities of a variety of indicators for the formulation of more targeted implementation plans. [3]

In measuring the expenditure efficiency of museum projects, the four-quadrant chart is firstly utilized to assess the relationship between the importance of museum invested projects in people's mind and the public satisfaction with each project, so as to tell the service status and future direction to improvement of each invested functional project.

2.3 Questionnaire and Reliability Test

2.3.1 Minnesota Satisfaction Questionnaire

Public satisfaction was assessed by questionnaire analysis. Minnesota Satisfaction Questionnaire (MSQ)'s theoretical foundation is effectively used in the investigate-public's assessment of the importance of museum projects and the psychological satisfaction of each project. [4] The options under each question in the questionnaire were designed to be five levels, namely, very satisfied, satisfied, neither (dissatisfied nor satisfied), dissatisfied and very dissatisfied, so as to avoid ambiguity in the measurement of people's degree of the sense of satisfaction with public service contained in each project of museum.

2.3.2 Questionnaire Distribution and Data Reliability Test

The questionnaire was randomly distributed through multiple channels in a mixed way of online and offline, totaling 231. Among them, the number of questionnaires effectively recovered was 209. Therefore, the effective recovery rate of the questionnaire reaches 90.48%, which is far more than 80%, indicating that the survey conclusions can be safely adopted. In addition, the effectively recovered questionnaires were randomly divided into two groups for a reliability test, and the Cronbach coefficient was calculated by using SPSS software. As a result, $\alpha= 0.811 \geq 0.800$, which further showcases the reliability of the questionnaire survey put into use through the investigation.

3. Results Analysis and Discussion

3.1 Museum Projects and Expenditure Structure in Hubei Province

Based on the 2021 Annual Department Balance Sheet of Hubei Provincial Museum released by the Department of Culture and Tourism of Hubei Province as well as certain information processing, the projects which are directly related to public services of Hubei Provincial Museum with great museum expenses can be mainly divided into six categories: media demonstration, in-building humanity & cultural content, staff service, cultural & creative products, facility maintenance and public environmental health.

3.2 IPMA of Museum Projects Based on Public Concepts

As shown in the Matrix painted below, the displayed result obtained through SPSS represents the relationship between the significance awareness of each museum programs from the public and public satisfaction with the services converted by the six museum expenditures.
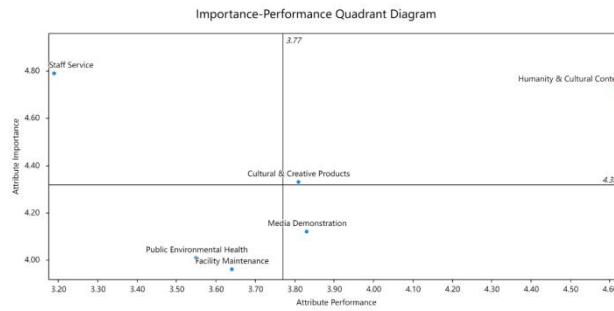
Chart 1

Indicators in different quadrants correspond to distinct explanations, and targeted optimization measures can be formulated for different quadrants:

The first quadrant is the dominant area. In the first quadrant, indicators come with considerably high expectations from the public and amazing actual satisfaction degree. Specifically, In-building Human & Cultural Content and Cultural & Creative Products are the most advantageous projects in the expenditure portfolio of museums, which are considered to be maintained and slowly upgraded.

The second quadrant is the improvement area to specific projects. Generally, the public puts much emphasis on indicators in the second quadrant, whereas public satisfaction with their realization is far from being sufficient. As icon clearly shows in the second quadrant, the staff service needs, apparently, to be strengthened and improved as a focus on weak programs.

The third quadrant is the less-priority area. For projects in the third quadrant, public satisfaction and importance awareness are relatively low, and even if the museum invests twice as much time and money to perfect this factor, the satisfaction index never increases dramatically. In addition, as far as the Covid-19 is concerned, health expenditure is extremely necessary even at the moment, so it is suggested that facility maintenance and public environmental health should be given the same attention and funds as before, while it should be strengthened as a sub focus only.

The fourth quadrant is the oversupply area. Midea demonstration is sited right here, and people are more content with the project's performance than the degree to which they think it is important. Therefore, the museum can appropriately reduce the significance of that and maintain its original speed of development.

3.3 Findings

3.3.1 Expenditure on the Intangible Dominates All Program Expense

Based on collected data, a comprehensive table is formed below.

Museum Project	Actual Expenditure	Attribute Importance	Attribute Performance
Media Demonstration	30.88%	4.12	High
Humanity & Cultural Content	41.06%	4.73	High
Staff Service	9.42%	4.79	Low
Facility Maintenance	14.11%	3.96	Middle
Public Environmental Health	0.26%	4.01	Middle
Cultural & Creative Products	4.27%	4.33	Middle

Table 1

Table1 illustrates the expenditure structure of Hubei Provincial Museum. The expenditure on each type of public service varies according to the museum's own budgeting.

Fund injected into Humanity & Cultural Content overtakes that of any other categories, with the proportion being around 41.06%. Expense for Media Demonstration ranks second, occupying just below one third of total museum expenditure.

The rest sorts of public services spent approximately 30% of the whole expenditure. Money output for facility maintenance outnumbers that of staff services, with the rate of museum's total cost counting about 14.11%. Staff service costed only 9.42% of the fund annually, followed by cultural creative products, 4.27%.

Overall, the expenditure structure of Hubei Province Museum showed little trait of diversification. And the tangible occupied the absolutely dominant fund, while the intangible (Staff Service and Environmental Health) has drawn less attention of the museum.

3.3.2 Mismatch between Expenditure and Public Preference

The result implied an unbalance between expenditure scale and social preference. And a fairly significant point can be concluded: the mismatch between actual expenditure and public-attributed importance of each category leads to the outcome of public performance.

To exemplify, Staff Service, which was considered of most importance among the 6 sorts of public services (4.79/5.00), was paradoxically supported by only around 9.4% of total expenditure, covering bonus, insurance, salary, uniform fee, etc. As a result, the performance calculated by public feedback was the lowest.

Media Demonstration, which was given far less importance (4.12%), on the other hand, costed nearly 1/3 of the total expenditure. The expenditure efficiency can thus be doubted, though, it still can be reckoned to achieve a relatively high public-attributed performance. Other categories, as listed in the table, also shared the same problem.

4. Optimizing Approaches

4.1 Performance Appraisal of Efficient Employees

In importance-performance matrix, we can see that the importance of staff service index in people's minds is highly prominent, whereas the actual performance of that is still far from being satisfactory, which demonstrates, in economic dimension, that the rate of return of investment on the museum's human resources-related project is less than excellent.

It is worth mentioning that the per capita self-assessment score of Museum employees on the performance of museums and their own individual service supply is close to 90%, much higher than that of the public through the investigation.

Therefore, the problem is apparently clear: there is an intangible line between the evaluation criteria of museum employees for their self-performance and those of people outside the museums. At the same time, the staff members hold views on the definition of splendid performance at each service project different from people's measurement.

Therefore, on the one hand, it is recommended to reestablish a systematic appraisal mechanism for all staff members. Specifically, by putting forward the combination of internal appraisal rules and regulations and the feedback collected from tourist questionnaires, museums link employee bonuses and other benefits to on-the-job performance for the sake of improving the service of all functional teams, and finally fuel the public satisfaction with the indicator of Staff Service.

On the other hand, museums are supposed to, firstly, raise the threshold of talent selection to ensure the steady rise of the museum's interpretation quality. Parallelly, strengthen the staff training of on-the-job talents by conducting and implementing employee training programs, organizing employee salons regularly, or occasionally holding free public lectures, etc. The methods above not only improve the professional ability of docents, but also relentlessly maximize the quality of public services.

4.2 Correction of Public Impression

From the result of the research, people's expectations of the performance are universally high, but failed to be ever realized by their visits there. Besides the improvement of public services offered, museums should evaluate the expectation that people may generate because of their promotional actions through the media. If it is just too high or low, some adjustments regarding the promotional content will be needed.

The current situation the museum is facing is that the public expectation is excessively higher than its real performance. Thus, Hubei Provincial Museum is supposed to conduct the correction of its public impression. To be specific, it has to see whether it has

delivered an image that could hardly represent itself in reality, involving physical appearance, services provided and even interactive activities held by museum. Once the problem is located, the content with regard to it shall be quickly changed and organized both objectively and properly.

Parallelly, the museum needs to develop more information distribution channels to spread its core culture and real image, promoting themselves as a lot of brands do, so as to raise the awareness of sectors of society as well as brand reputation. Nevertheless, one point that should be noted is that, the museum should never exaggerate what it actually is and what it actually provides. In this way, the correct impressions that people are supposed to have can be controlled as well.

4.3 Optimization of Service Execution

Given that the public pays substantially high attention to tangible programs of museums, it is indispensable for the museum to keep up-to-update and provide its audience with more diverse choices, which requires, naturally, a more efficient mechanism for the examination and approval of proposals.

Appropriately shorten the application and preparation cycle of each new program in the museum. Museums need to organize their funding plans in a timely manner to get the government's approval of their high-quality proposals as soon as possible. During project implementation, the museum should promote the synchronization of project implementation with the progress of fund allocation and use to ensure that projects meet performance standards as soon as possible.

At the same time, museums should pay more attention to the details of project capital expenditure over the years, analyze, master and standardize the use of funds, lay a scientific basis for budget declaration, and help arrange the capital expenditure structure of various projects efficiently.

5. Conclusion

There are strong proofs implying the comparative low efficiency of museum expenditure, which prominently results from an apparent mismatch between expenditure and public preference. The solutions for optimization proposed at the end of this paper has certain universality for the upgrading of expenditure efficiency of domestic museums and some overseas counterparts. The improvement actions of museums, eventually, will prove the significance in application of the paper.

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