

Original Paper

Research on Exhibition Service Quality Improvement Based on Exhibitors' Perspective—Take the 42nd China Shandong Medical Expo as an Example

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Abstract

Exhibitors are the main body of the exhibition, and improving the exhibition's service quality to win the exhibition's satisfaction is an essential condition for the exhibition to obtain and maintain a competitive advantage. This paper introduces information into the SERVQUAL model, constructs an evaluation scale of 21 items, including six dimensions of tangibles, reliability, responsiveness, assurance, empathy, and information, and takes the 42nd Shandong Medical Expo as an example to evaluate and analyze the service quality of the exhibition. It is found that the expectation perception gap between reliability and responsiveness is the largest, the expectation perception gap between assurance and empathy is more significant, and the expectation perception gap between tangibles and information is the smallest. Finally, some suggestions and countermeasures are put forward from the aspects of improving the exhibition design, highlighting the characteristics of the exhibition, broadening the content of exhibition activities, enhancing the value of exhibitors, attaching importance to the perception of exhibitors, improving the level of service, using digital technology and strengthening the effect of exhibitors.

Keywords

exhibitors, exhibition, service quality, medical fair

1. Introduction

With the rapid development of China's economy and the continuous transformation and upgrading of China's exhibition industry, how to improve the quality of exhibition services has become an important issue to promote the healthy development of the exhibition industry. In order to promote the

high-quality development of the exhibition industry, this paper, based on the related theories of service quality, draws lessons from the related research of exhibition service quality, and considers the application of information network technology in exhibitions. On the basis of the existing five dimensions of tangibility, reliability, responsiveness, assurance and empathy, it innovatively increases the information dimension, thus constructing an evaluation system of exhibition service quality with six dimensions. Taking the 42nd Shandong Medical Expo as an example, this paper analyzes the exhibitors' evaluation of the service quality of the exhibition, discusses the factors affecting the service quality of the exhibition and the reasons for the gap, and finally puts forward some countermeasures and suggestions to improve the service quality of the exhibition.

2. Theoretical Basis

2.1 *The Concept and Evaluation Model of Exhibition Service Quality*

Exhibition service quality refers to the ability of suppliers to provide products and services to meet the requirements of relevant participants in the whole process of exhibition service. From an exhibitor's point of view, service quality is determined by the difference between exhibitors' perceived service quality and expected service quality and the extent of the difference. The smaller the gap between expected service quality and perceived service quality, the better the service quality is and the more satisfied the customers will be.

As for service quality measurement, many scholars (Grönroos, 1984; Lee et al., 2015; Parasuraman et al., 1988) agree that it is obtained by measuring the gap between consumers' expectations and actual perception of service products. Specifically speaking, it is based on the five dimensions of service quality, namely tangibility (tangible facilities, equipment, environment, personnel visibility, and intangible services), empathy (attention to customer needs, The SERVQUAL evaluation scale was designed to measure the personalized service, guarantee (the knowledge and skills of service personnel), responsiveness (the ability to provide assistance promptly) and reliability (the ability to fulfill service commitments correctly). Chinese scholars (Chang et al., 2020; Chen & Mo, 2012) have conducted many studies based on the characteristics of exhibition service products. Chu (Chu, 2009) designed 20 second-level projects under five dimensions, Li (Li, 2017) expanded the five dimensions to seven dimensions, a total of 31 projects, and Fang (Fang & Zhang, 2014) developed the five dimensions to 38 second-level projects. Based on referring to the research of relevant scholars, combined with the application of information and network technology in exhibition services, considering that the use of information and network technology channels for exhibitors to provide professional publicity and marketing can produce "spillover value," this study adds the dimension of "information" in addition to the five dimensions, to build the exhibition service quality evaluation model, as shown in Figure 1.

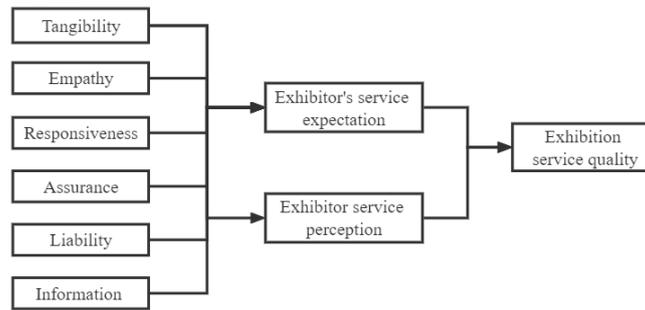


Figure 1. Evaluation Model of Exhibition Service Quality

2.2 Exhibition Service Quality Evaluation Items and Measurement

Based on the above analysis, this study combined the characteristics of the exhibition service and the SERVQUAL scale of perception and attitude to design the measurement index and adopted the questionnaire survey to measure the expectation and perceptions of exhibitors. Specifically, 18 index items are designed for the five dimensions of service quality evaluation: tangibility, empathy, assurance, responsiveness, and reliability. The newly added information dimension focuses on the analysis of the target market by the exhibitors through their official website and we-media and the promotion of the brand awareness of the exhibition through marketing activities based on hot events (Xu & Lin, 2021). Three items, namely “timely transfer of transaction information”, “comprehensive information of the official website,” and “Good Information transmission effect of the We-media platform”, was designed for measurement. Finally, an evaluation scale containing six dimensions and 21 second-level items (A1-A21) was formed, as shown in Table 1. The questionnaire asked exhibitors to rate the service expectation and service perception of 21 items. Items are measured on a 5-point Likert scale (1=strongly disagree, 5=strongly agree). A question is designed to evaluate exhibitors, and the 5-point Likert scale is also used to measure general expectations and perceptions

Table1. Exhibition Service Quality Evaluation Scale

Dimension	Project	Code
Tangibility	The environmental layout of the exhibition hall is reasonable and convenient to visit.	A1
	Safe passage and fire fighting equipment are easy to find.	A2
	The overall exhibition equipment is modern.	A3
	The mental outlook of service personnel is positive.	A4
Reliability	The promise provided by that sponsor can be fulfilled.	A5
	The process of receiving the service was smooth.	A6
	The service personnel is enthusiastic about solving difficulties.	A7

	The industry reputation of the organizers is good.	A8
	The services provided by staff are timely and prompt.	A9
Responsiveness	The transmission of exhibition information is timely.	A10
	Staff satisfaction of needs is urgent.	A11
Assurance	The professional standard of the staff is the highest.	A12
	The staff can be trusted.	A13
	It is reassuring to be served.	A14
Empathy	The publicity of the exhibition is great.	A15
	The seminars and conferences have had good results.	A16
	The number of professional audiences with strong purchasing power is enormous.	A17
	The interests of exhibitors are taken seriously.	A18
Information	The transmission of transaction information is timely.	A19
	The information on the official website is comprehensive.	A20
	The self-media platform has a good information dissemination effect.	A21

Based on the investigation, this study measured the difference between exhibitors' perceived quality of service (P_i) and expected quality of service (E_i) to evaluate the quality of service. At the same time, the following calculation methods are used to evaluate the overall Service Quality (SQ) and the average service quality ($SQ_{average}$) of the exhibition. The calculation formula of exhibition service quality SERVAUAL is as follows:

$$SQ = \sum_{i=1}^k (P_i - E_i)$$

In the formula: SQ is the total perceived quality of service calculated by SERVQUAL;

E_i is the expected score of item i ;

P_i is the perception score of item i ;

k is the number of items covered by each dimension;

n is the number of dimensions;

The SQ value obtained is divided by n , that is, the number of projects, to get the average SERVQUAL score of each exhibitor in the quality of service experience, which is as follows:

$$SQ_{average} = \frac{\sum_{i=1}^k (P_i - E_i)}{n}$$

3. Evaluation of Exhibition Service Quality Based on Exhibitors' Perspective

3.1 Survey Implementation and Sample Characteristics

“China International Medical Devices (Shandong) Expo” (referred to as “Medical Expo”) has been held since 1995 and is held twice a year in spring and autumn. With more than 20 years of continuous innovation and development, this exhibition has become one of China’s largest regional medical device exhibitions. It has a wide influence in the industry. It has a vast influence on the industry. The 42nd Medical Fair was held on September 19-21, 2019, during which time field research was completed. The exhibition attracted 316 exhibitors from 20 provinces (municipalities and autonomous regions). To improve the effectiveness of the data, only one questionnaire was distributed to each booth, and a total of 239 copies were recovered. After the questionnaires were collected, all were reviewed, and those with missing items or obvious logic errors were eliminated. Finally, 216 valid questionnaires were obtained, with an effective rate of 90.38%. The descriptive statistical analysis of the samples is shown in Table 2.

Table 2. Descriptive Statistical Analysis of Samples

Basic information	Option	Number of samples (s)	Percentage (%)
In the area	In Shandong Province	135	62.5
	Outside Shandong Province	81	37.5
Scale	Under 100	62	28.7
	100-500	76	35.19
	500-1000	42	19.44
Number of exhibitions	More than 1000 people	36	16.67
	1 time	55	25.46
	2-3 times	87	40.28
Basic information	4-5 times	49	22.69
	In the area	More than 5 times	25

Based on the analysis of the samples, the proportion of exhibitors from Shandong Province reached 62.5%, and the proportion of exhibitors from other provinces reached 37.5%. The scale of the enterprises in which the exhibitors are located is mainly less than 100 and mostly between 100 and 500. Small and medium-sized enterprises are the main force of the exhibitors of the Medical Expo. Judging

from the number of exhibitors participating, the proportion of initial participation is only 25.46%. The proportion of exhibitors two or more times reached 74.54%. The sample includes exhibitors from different regions and enterprise sizes. The statistical characteristics of the survey sample are relatively consistent, with solid randomness and good data reliability.

3.2 Evaluation and Analysis of Exhibition Service Quality

In this study, SPSS26.0 software was used to analyze the reliability of relevant measurement items to detect the quality of the scale. Through a reliability test of the data of 21 measurement items, the internal consistency coefficient (Cronbach's α value) between each measurement item and each dimension variable was calculated. The test results show that the α coefficient of each dimension variable is between 0.821 and 0.956, and the effectiveness of these items meets the statistical requirements. The average value and difference value of service quality expectation and perception of each measurement item are calculated, and the results are sorted. At the same time, the average value and difference value of the overall service expectation and perception of the exhibition are calculated and obtained using the formula of exhibition service quality SERVAUAL. The specific measurement results are shown in Table 3.

Table 3. Average and Gap Values of Expectation and Perception of Exhibition Services

Dimension	code	expected	sort	perceived	sort	gap	sort
Tangibility	A1	3.08	21	3.04	18	-0.04	3
	A2	3.94	16	3.15	15	-0.79	11
	A3	4.11	4	3.36	4	-0.75	7
	A4	3.96	15	3.13	16	-0.83	16
	average	3.77		3.17		-0.6	
Reliability	A5	3.94	16	3.34	5	-0.6	4
	A6	4.13	2	3.02	19	-1.11	19
	A7	4.11	4	2.6	20	-1.51	20
	A8	4.07	6	3.32	6	-0.75	7
	average	4.06		3.07		-0.99	
Responsiveness	A9	4.01	11	3.09	17	-0.92	18
	A10	4.05	8	3.25	7	-0.8	12
	A11	4.05	8	3.24	8	-0.81	14
	average	4.04		3.19		-0.84	
Assurance	A12	3.99	12	3.18	12	-0.81	14
	A13	3.98	13	3.18	12	-0.8	12
	A14	3.92	20	3.19	11	-0.73	6
	average	3.96		3.18		-0.78	

	A15	4.03	10	4.26	1	0.23	2
	A16	4.16	1	2.39	21	-1.77	21
Empathy	A17	4.06	7	3.23	9	-0.83	16
	A18	3.93	19	3.16	14	-0.77	10
	average	4.05		3.26		-0.79	
	A19	3.94	16	3.23	9	-0.71	5
	A20	4.13	2	3.38	3	-0.75	7
Information	A21	3.97	14	4.22	2	0.25	1
	average	4.01		3.61		-0.4	
Overall average		3.98		3.24		-0.74	

By analyzing the data in Table 3, it can be seen that the overall average of perceived value and expected value of service, the average value of each dimension, and the corresponding gap value show that the perceived value of service of exhibitors is smaller than the expected value of service. The overall service quality does not reach the expected level of exhibitors. Regarding the gap size, the gap between reliability and responsiveness is the largest, the gap between assurance and empathy is more significant, and the gap between tangibility and information is the smallest. It can be seen that exhibitors need a higher evaluation of the service quality of the exhibition in terms of the ability to reliably and accurately fulfill the service commitment, help, and quickly provide adequate service. The exhibition staff's service ability and attention to customers based on professional knowledge and quality can not effectively meet the needs of exhibitors. For exhibitors to the exhibition facilities, equipment, and other tangible environments, the strength of information dissemination is relatively recognized.

From the perspective of sub-projects, the service perception of other projects is lower than the service expectation, except that "the publicity intensity of the exhibition" and "the information communication effect of the We-media platform" exceed the expected level of exhibitors. There is a small gap between the perception and expectation of the "rationality of exhibition environment arrangement" and "fulfillment of the commitment provided by the organizer," and the service can meet the expectations of the exhibitors. The absolute difference between the "timeliness of staff providing services," "smoothness of service acceptance process," "attitude of service personnel to solve difficulties," and "effect of seminars and conferences" is relatively large, indicating that exhibitors have high expectations for these four projects. Still, the experience is relatively poor, and there is a large gap between service perception and expectations.

From the perspective of service expectations, exhibitors' expectations for services ranged from 3.08 to 4.16, among which the expectation of "comprehensiveness of the information on the official website," "effect of seminar and negotiation," "process of receiving service," and "attitude of service staff to solve difficulties" are all higher, reaching 4.11 or above. It can be seen that exhibitors are looking

forward to obtaining comprehensive and accurate information through the official website, professional information guidance through exchanges and negotiations, and timely and convenient services during the exhibition. The ability of exhibitors to provide professional services, scientific advice, and authoritative information needs to be improved.

From the perspective of service perception, exhibitors' perceived value of service ranges from 2.6 to 4.26, among which the items with the high perceived value of service include "the degree of fulfillment of the promises provided by the organizer," "the overall exhibition equipment is modern," "the information on the official website is comprehensive," "the propaganda intensity of the exhibition" and "the information dissemination effect of the We-media platform".." It indicates that the organizer has better service quality in these projects. The modernization level of exhibition facilities and equipment, such as auxiliary facilities such as registration, rest, activities, communication, network, information management systems, etc., provide exhibitors with high-level information and intelligent services. The convenience brought by the relocation of the new exhibition hall and the use of new media such as "Exhibitor's Show," WeChat, and Tik Tok platforms enable exhibitors to have a high-quality experience.

4. Suggestions and Countermeasures

Through investigation and analysis, it can be seen that the overall evaluation of exhibition service quality based on the perspective of exhibitors is low, and there are differences in the assessment of service quality of each project based on the evaluation scale. Still, the overall exhibition service quality needs to be improved. Based on the evaluation of various dimensions of service quality and projects, this paper analyzes the characteristics and current situation of the operation and management of the exhibition. It puts forward the following suggestions and countermeasures.

4.1 Improve the Exhibition Design and Highlight the Characteristics of the Exhibition

In the exhibitor experience, the service perception value of the project "exhibition environment layout is reasonable and easy to visit" is relatively low. The display design enhances people's visual effects of the guarantee and the material basis for the exhibition's success. Therefore, the exhibitors should do an excellent job in the exhibition design, according to the professional requirements of the exhibition booth division and layout of the exhibition space. During the exhibition in addition to meeting the basic functional requirements of the exhibition, it is also necessary to combine the exhibition's theme and fully understand the needs of exhibitors to display products for exhibition design. When selecting exhibition items, we should choose the items that can convey the theme according to the exhibition theme designed by the exhibition. At the same time, we should consider people's exhibition behaviors and habits according to specific timing and logic. It is necessary to creatively use material conditions and the latest technical means to emphasize and render with the help of decoration, lighting, multimedia, and VR technologies to enhance the atmosphere of the exhibition hall. Creatively set functional areas and space displays according to product characteristics to better highlight the

exhibition's theme and the exhibition's main image and style(Chang et al., 2020).

4.2 Broaden the Content of Exhibition Activities and Enhance the Value of Exhibitors

From the above analysis, it can be seen that the gap between service perception and expectation is the largest, and the evaluation of service quality is the lowest in the project "Effects of Seminars and Fairs." Planning various meetings and activities during the exhibition can significantly enrich the information function of the exhibition and form a substantial information accumulation and dissemination effect. Hospital Equipment Management and Bidding Procurement New Mode Exchange Seminar", "Hospital Management International Series Forum," etc., so that exhibitors can obtain the latest development information of the industry, as well as the advanced practices and experience of their peers. Individual exhibitors can also fully display the image of the company and its products by participating in the exchange and discussion sessions, forming a brand effect, and at the same time, promoting the core products of the company to win customers. The relevant content of the exchange and discussion activities can also form a broad communication effect through the Internet, new media, and other media, which can help exhibitors enhance long-term interaction with customers, promote publicity and promotion and improve the added value of their exhibitors(Jin et al., 2012).

4.3 Pay Attention to Exhibitor Perception and Improve Service Level

From the evaluation results, it can be seen that the items with a large gap between service perception and service expectations include "service personnel's attitude to solving difficulties," "timeliness of staff providing services," "smoothness of receiving service process," etc. Therefore, the exhibition needs to improve the staff's service attitude and serviceability. First of all, due to the different purposes of each exhibitor, the exhibitors must fully understand the needs of each exhibitor before the exhibition and formulate precise service plans to provide personalized services. Secondly, it is necessary to ensure the responsiveness of the service, improve work efficiency in communication with exhibitors, and provide assistance quickly and accurately(Aditya, 2019). Third, it is essential to improve the service awareness of service staff and have enthusiasm and empathy in the communication with exhibitors to improve the subjective perception of exhibitors. In addition, the communication and interaction with exhibitors should be strengthened, feedback channels should be smooth, and an on-site complaint handling mechanism should be established to proactively solve problems, and improve the timeliness and effectiveness of the response to the issues, to improve the service experience of exhibitors.

4.4 Using Digital Technology to Enhance the Effect of Exhibitors

According to the above analysis, exhibitors are pretty aware of the publicity of the exhibition and the effect of information communication generated by the we-media platform, which also fully indicates that exhibitors are expecting the application of information technology in the exhibition. To meet the needs of modern information exchange and communication, the organizer can enrich the exhibition content through the form of "Internet + exhibition", combine physical booths for publicity, and realize the connection between online and offline. For example, use high-tech video, audio technology, and advanced visual communication methods, supplemented by photos, text, natural objects, etc., to convey

and display information effectively. In particular, multimedia interactive technology can be incorporated to enhance the interaction between customers and the exhibition and generate colossal marketing power. To enlarge the “connection” value of the exhibition, the organizer can upgrade the platform service mechanism, create a new service system of all-media display + on-site WeChat communication + digital marketing, and promote the effective transformation of online + offline all-domain traffic by improving the digital layout ability to stream media. The exhibition can also use digital technology to sort out customer information and introduce customers to exhibitors on the premise that customers are informed to create conditions for exhibitors to seek potential customers and extend the trade function of the exhibition.

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