

# Implementation of HISTOQUAL Model to Measure Visitors' Expectations and Perceptions in Museum Geology Bandung

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**Abstract**—Service quality in museum influences museum experience, concerning with museum exhibits presentation, personnel competence, empathy, and consumption on products related to the museum. This paper has presented a formal examination on visitor expectations and perceptions of service quality in museum Geology Bandung. It uses modified HISTOQUAL model and was conducted in Museum Geology Bandung. A total of 112 questionnaires were completed, 30 questions related to *Responsiveness, Tangibles, communication, consumables, Empathy*. From the result of this studies there are several aspect that should be improved regarding the responsiveness of the staff, information for the visitors, consumables and empathy. There are significant differences regarding visitor expectations and perceptions about museum services.

**Keywords**— *heritage museum, HISTOQUAL, service quality, perceptions, expectations, behavioral intentions.*

## I. INTRODUCTION

### A. Museum Definition

According to reference [1] Museum is a part of cultural heritage and become important heritage destinations, it become alternative choices as tourist attraction for both local and foreign tourists in many destinations. Museum has a strategic function in the field of history and culture; museum can provide information about aspects of what happen in the past that still can be preserved as a cultural heritage to become part of the identity of a nation [2 – 5].

### B. Service Quality

Museum should be more visitor-oriented and facilitating by providing experiences that will satisfy their visitors, a good comprehension of visitor experiences through assessing visitors perceptions during museum visits are important for the museums [6]. Customer satisfaction measurement is one of the most important issues in all types of business organizations, this is justified by the customer orientation philosophy and the main principles of continuous improvement of modern enterprises. Customer satisfaction measurement may help business organizations to understand customer behavior, and particularly to identify and analyze customer expectations, needs, and desires [7].

Literatures review advised that various number of studies have been performed in order to measure the service quality in museum. Most of the researchers are using the SERVQUAL visitors perception and expectations model to evaluate museum condition, whether it is using the 22 items dimensions of SERVQUAL or being re-modified with other dimensions [2-5], [8-14]. With modifications in some items to adapt different environment, it is relevant that SERVQUAL can be useful as starting point, not as the final answer for assesing and improving service quality [15]. In this model, two different variables influence customer perceptions, customer expectations and service standard, where the gap between expectations and service performance is the primary indicator of overall service quality.

How to measure museum service performance is still debatable, there are many standards and indicators that have been carried out. Several aspects has been mentioned by references [17] which emphasize on the importance of the arrival experience (setting the mood for the experience), the physical setting (layout and display), the type and quality of communication between museum personnel and guests (communication strategies) and entertainment.

### C. Conceptual Framework

Service quality in the museum setting involves various aspects of the museum experience, related to the exhibits presentation, personnel competence and empathy [4]. In order to measure service quality in the heritage context, including museums, references [18] have re-modified the SERVQUAL model into a new model called HISTOQUAL. This model included 24 items, grouped according to five dimensions (*responsiveness, tangibles, communication, consumables, and empathy*). According to reference [18], responsiveness is related to staff efficiency and the ability to recognize customer needs. Tangibles refers to the property environment (interior and exterior), such as cleanliness, authenticity, and attractiveness. Communication describes the quality and detail of the information provided. Consumable refers to additional services such as restaurants and shops. Empathy is defined as the willingness to take into consideration the needs of children and less-able visitors.

In this research HISTOQUAL model [18] is modified to suit the actual condition in museum Geology Bandung where the other items are adapted from references [4, 19-20].

HISTOQUAL model is used to measure visitors' expectations and perception on service quality in museum Geology Bandung. The variance (gap) of expectation and perception will also be measured.

#### D. Aim and Objectives

This study aim to assess visitor expectations and perceptions about service quality in Museum Geology Bandung using modified HISTOQUAL Model. A primary research based on empirical study by conducting visitor survey will answer following questions:

1. What is the level of museum visitor expectations and perceptions in museum Geology Bandung;
2. How big is the gap score between perceived and expected scores of museum service quality;
3. What are the main dimensions of perceived and expected service quality in museum Geology Bandung;

## II. RESEARCH METHOD

Self-administered questionnaires design is being used for this study, which is consist of four parts. The first part is about the visitors profile, consists of factual questions or subject descriptors to describe about who the respondents are. In this part, there would be 8 questions related to the visitors profile (Age, Gender, occupation, level of education, origin, number of time visited museum, motivation, and partner visiting museum). The second part will ask about respondent perception about museum. It consists of 24 item questions from 5 dimensions of modified HISTOQUAL model. The third part consists of 24 item questions; deal with the perceptions of service experienced in Museum Geology Bandung. In the second and third part, attitudinal questions are made with a broad category that concerns attitudes, opinions, beliefs, interests. Values are used to find out what people think. Five-point likert scale, ranging from "strongly disagree" (1) to "strongly agree" (5) to assessed the visitors' answers in accordance with the methodology proposed.

The distribution of questionnaire to the respondents is given at convenient time of the respondents. Visitors were given the questionnaire on their arrival at the museum and it being collected right before the respondents leaving the museum. Respondents also can fill out the questionnaire at the end of their visit. The respondents of this study were visitors of the museum as they were considered to have particular purpose to visit museum Geology Bandung and hence have specific expectations of the experience. For the same reason, they were considered to be in the best position to report their perceptions of the experience in visiting museum Geology Bandung.

Statistical software SPSS version 17 will be used in descriptive statistics, exploratory analysis, which involves mainly descriptive statistics to summarize data were the demographic characteristics of the respondents were outlined in order to simplify the understanding of the data. Meanwhile the main analysis involved more sophisticated statistical

analysis such as the implementation of norm to measure the level expected and perceived service quality, gap score analysis, paired-sample T-test and eta square to measure level of significance.

## III. FINDINGS AND DISCUSSION

A total of 130 questionnaires were distributed within 22 days. 122 questionnaires has returned to researcher with 104 questionnaires are fully completed and 18 questionnaires are partially completed; 8 questionnaires are still included in the study because they consist of useful data, meanwhile the other 10 questionnaires were eliminated due to level of incompleteness is more than 50%. In total, 112 samples are included in this study and further statistical analysis is obtained.

### A. Respondents Profile

63.4% of the respondents were female, and 36.6% were male. The research findings shown that most of respondent are aged between 18-30 years old (70.5%), 25% were between 31-50 years old, and 4.5% were aged between 51-70 years old. These findings showed that museum has attracted mass visitors, and many of them are young and dynamic [20].

Related to the age group, most of respondents (48.2%) were student, followed by fulltime / part time workers (32.1%), self-employed (7.1%), housewives (4.5%), the rest are other occupations (8.0%). For the level of education, compositions of respondents are: 13.4% had a primary and secondary school education and most of the respondents 86.4% of respondents had a diploma / degree and postgraduate education. The results showed that most of the respondents for this study are come from high educational background.

Most of the respondents are domestic tourists (70.5%), which came from other cities in Indonesia, such as Jakarta, Surabaya, Yogyakarta, Pemalang, Brebes and Makassar; 25% are the local resident of Bandung city and 4.5% of respondents were the international tourists. The international tourists in this study the samples are came from Asia (Singapore and India), Europe (Germany) and America (USA).

### B. Motivation to visit

From the research findings, most of the respondents are repeater visitor (55.3%) and the rest of the respondents are the first time visitors (44.6%). Moreover, the research findings also showed that the main reason for the respondents to visiting museum Geology Bandung is for family activities to educate the children (33.9%). The other reasons for the respondents for visiting museum is for leisure or something to do in spare time (21.4%), to look what museum has offer (19.6%), other specific purposes because Museum Geology as the center of geological studies in Indonesia made some others visitor (17.9%) to conduct an observation, school practicum and research are the main purposes of their visit. The last motive is related to the heritage and past experience some of the respondents for nostalgia (7.1%).

Related to the travel behavior to museum Geology, most of the respondents visited the museum are in study group or travel

group (40.2%). This fact is related to the place of origin of the respondents who came from other cities in Indonesia which are commonly came in a group of 10-500 peoples. The other respondents are come with their friends (33.9%), and with family members (17%), and traveling alone (9%).

### C. Expected and Perceived value of Service Quality

Descriptive analysis of the mean scores was calculated using SPSS based on the questionnaire data mean value on visitors expectation and perception. After that, the research calculated variance / gap of the expectations and perceptions mean scores from the respondents regarding five dimensions in HISTOQUAL model. The result is represented in 24 items (Table 1).

TABLE 1 EXPECTATIONS AND PERCEPTIONS GAP IN MUSEUM GEOLOGY BANDUNG (N=112 RESPONDENTS)

Dimensions	Items	Perceptions		Expectations		Gap Mean	t-value
		Mean	SD	Mean	SD	(P-E)	
<b>Responsiveness</b>	Helpful and Courteous staff	3.78	0.791	4.21	0.716	-0.44	4.626**
	Feel Welcome by staff	3.80	0.682	4.20	0.669	-0.39	4.431**
	Level of tolerance during peak hour	3.70	0.792	4.19	0.8	-0.49	4.606**
	Willingness to take time with visitors	3.61	0.809	4.07	0.768	-0.46	4.364**
	Well informed staff	3.66	0.778	4.30	0.826	-0.64	6.072**
	Good Consulting Services	3.67	0.787	4.17	0.804	-0.5	4.703**
	Convenient operating hour	3.73	0.759	4.21	0.773	-0.47	4.689**
	Staff understand specific needs	3.50	0.816	4.03	0.799	-0.53	4.972**
<b>Tangible</b>	Property is well maintain	4.00	0.816	4.35	0.756	-0.35	3.323**
	General cleanliness	4.04	0.782	4.32	0.713	-0.29	2.800**
	Staff Appearance	3.94	0.726	4.37	0.658	-0.43	4.644**
	Attractive surroundings	3.74	0.839	4.19	0.777	-0.45	4.165**
	Up-to date equipment	4.01	0.777	4.29	0.74	-0.28	2.761**
	Comfortable resting area	3.56	0.868	4.13	0.844	-0.57	4.983**
	Clear Displays of exhibit	3.81	0.800	4.32	0.661	-0.51	5.200**
<b>Communication</b>	Direction signs are clear	3.93	0.802	4.29	0.788	-0.36	3.388**
	Adequate guided tours	3.38	0.941	4.03	0.954	-0.65	5.134**
	Foreign language leaflet	3.49	0.986	4.20	0.733	-0.71	6.116**
	Free maps provided	3.40	1	4.12	0.867	-0.71	5.757**
<b>Consumables</b>	Products sold are interesting	3.82	0.7	4.21	0.784	-0.38	3.928**
	Products are priced reasonably	3.48	0.816	3.98	0.92	-0.5	4.303**
	Variety of Food and Beverage are sold	3.29	0.856	3.83	1.012	-0.54	4.311**
<b>Empathy</b>	Facilities for Children	3.40	0.915	4.00	0.89	-0.6	4.975**
	Disable visitors needs are accommodate	3.44	0.957	4.07	0.946	-0.63	4.954**
<b>Mean for 24 Items</b>		<b>3.61</b>		<b>4.12</b>		<b>-0.51</b>	

The first part was about expectations, visitors highest expectations were focused on tangibles aspect: the staff appearance (mean=4.37) and the museum property is well

kept and restored (mean=4.35). The responsiveness aspect was also considered very important for the visitors: well informed staff (mean=4.30) and helpful and courtesy

(mean=4.21). Meanwhile the communication and consumables dimensions are come in third and fourth: where the clear and helpful direction signs around the museum are (mean=4.29); products sold in souvenir shop are interesting (mean=4.21), however the least important element considered by visitors is also in consumables dimension such as product sold in souvenir shop are price reasonably (mean=3.98); variety of food and beverage products sold (mean=3.83). In addition, visitors also still has least expected on empathy dimension such as the facilities for children (mean=4.00). The overall mean value for all expectations dimensions variable was high: mean=4.12, this is indicate that high demand are required by the visitors for an ideal museum.

The second part is about the perception of the visitors. After visiting museum, the respondents are re-evaluated the all the dimensions and actual experience in museum: clean and comfortable environment (mean=4.04); up to date equipment and displays (mean=4.01); museum property is well kept and restored (mean=4.00) and staff appearance (mean=3.98). They were the combination of top four highest rating on the visitor perception regarding the service quality that museum provides and all of the items are in tangibles dimension.

The lowest mean scores given by the respondents are related to the variety of variance of food and beverage sold by the museum (mean=3.29); adequate guided tours (mean=3.38); free maps for the visitors (mean=3.40) and facilities for children (mean=3.40). The overall mean evaluation on the perception was in level: mean=3.61, this indicate that visitors' perceptions to the museum service quality in 5 dimensions were lower than the expectations.

The result findings in Table 1 show that the standard deviation values for most of the expectations are smaller than those of perceptions. This can be indicator of homogeneity of visitors expectations is higher than level of homogeneity among visitors perceptions, it can be summarize that visitors have a tendency almost identical in expectations than perceptions [21].

#### D. Gap scores between Expectations and perceptions

Gap difference between expectations and perceptions were computed by perception minus expectation scores for each item and dimension. The gap between visitors' expectations and perceptions can also be seen in Table 1. All the respondents are expecting better service quality in museum Geology Bandung than the museum actually offers. From the research findings the largest gaps scores were item number 18 museum provided free maps or brochures (-0.71); item number 19 foreign language leaflet (-0.71); item number 5 well informed staff (-0.64), item number 24 facilities for disable visitor (-0.63) and item number 23 facilities for children (-0.60).

However the standard deviation here is much lower than what can be found in the individual items shows that there is

some homogeneity among the population. The standard deviations of the individual items are diverse from the average scores, making them comparatively consistent around the five dimensions. This indicates variety of perspectives on the museum service quality among the visitors.

With the negative mean scores (-0.51) for all 24 items of HISTOQUAL model, the level of service visitors perceived is lower than what they expected. This could be possible because quality of service delivered to the visitors for 5 dimensions in HISTOQUAL dimensions is under perform. According to reference, [15] it is generally common that consumer expectation is exceeding the actual service perceived and this mean that there is always something to be improved by the service provider for their customers.

#### E. Main dimensions in expected and perceived service quality

We can indicate the level of expected and perceived service quality of museum Geology Bandung, as seen in (table 2) the level of data criteria is adapted from reference [22].

TABLE 2 LEVEL OF DATA CRITERIA ACCORDING TO EMPIRICAL MEAN SCORE

Mean Score	Level of data Criteria
3.68 -5.00	High
2.34 - 3.67	Average
1.00 - 2.33	Low

After categorizing each of the empirical mean score, the next step is to calculate the mean score of all dimensions. In this study, it used descriptive statistics empirical mean score of perceptions and expectations.

TABLE 3 MEAN SCORE AND DATA CRITERIA FOR EXPECTATIONS AND PERCEPTIONS (N=112 RESPONDENTS)

Dimensions	Expectations Mean	Data Criteria	Perceptions Mean	Data Criteria
Responsiveness	4.17	High	3.68	High
Tangibles	4.27	High	3.87	High
Communication	4.15	High	3.55	Average
Consumables	4.00	High	3.53	Average
Empathy	4.03	High	3.42	Average
<b>Mean total</b>	<b>4.12</b>	<b>High</b>	<b>3.61</b>	<b>Average</b>

From all dimensions of expectations in table 3, the mean score is 4.12. It can be classified as high criteria, this indicates that visitors of the museum Geology Bandung have high expectations regarding service quality. This answers the first research question regarding the level of

visitor expectations. Meanwhile the perception mean scores is 3.61 can be classified as average criteria. However, two dimensions of museum performance categorized as high by the respondent are responsiveness and tangibles dimensions.

#### IV. CONCLUSION AND RECOMMENDATION

The major weaknesses are represented with three dimensions of service : the responsiveness of the staff, communication aspect related to information for the visitors, consumables and empathy. Although most of the items in perceived service qualities is in average, the mean score in overall satisfaction and behavioral intentions of the visitor were still high. These indicate some improvement need to be addressed by the management of Museum Geology Bandung to improve their service quality.

This study hopefully can contribute to study in investigating museum as tourist destination and specifically study in museum service quality. This study is based on the HISTOQUAL model that has been modified to measure the service quality and to be applicable to fit the actual condition in museum Geology Bandung. Based on the result of the reliability test, the HISTOQUAL model is highly reliable (reliability test result), thus stand for a beneficial and reliable instrument for measuring expectations and perceptions of service quality in museums. Research instrument was developed in conformity with other studies in the heritage and museum setting; therefore the results findings are fit for comparisons and as an additional point the methodology could be applied to other museum and heritage sites. For the management of museum Geology Bandung this study can contribute and suggestive that most of the visitors are domestic tourists and they are seeking pleasure and educational time during their museum visits. Thus, by providing the appropriate facilities and services for the visitor needs, the reputation of museum Geology Bandung in visitor perception can be improved.

This study is not without limitations; some of the limitations consider the sample size, although respondents with different demographic characteristics were included in the sample. The simple random sampling method may have resulted with a possible bias because it is not representing all the characteristics of the targeted population. Future research may be expanded to be conducted in several museums and used more representative number of sample in order to establish more extensive results. Moreover, researchers and practitioners in museum study might be involved in research by assessing different characteristics of visitors (age, occupation, level of education and travel pattern).

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