



## Research Paper

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# A qualitative analysis of the biases caused in a questionnaire survey

*Accepted 30<sup>th</sup> October, 2020*

### ABSTRACT

This study aims to explore why library users express their comments on library's services, namely collections, facilities, space, librarians, and then arises different viewpoints. Based on a questionnaire survey conducted at a university library toward its users, the researchers have found phenomena showing that there are some factual differences between the quantitative data and the qualitative data. The differences lead to a question: "Is there a bias when library users express themselves in a library survey?" The researchers first picked up the questions which emerged the apparent difference and then employed individual interviews with the library users who were randomly selected from the university but had experience in using its library. The researchers asked 14 interviewees how they explain the differences and their possible causes. The study suggests that biases and mistakes exist in each questionnaire survey. Using qualitative methods such as interviews can be a help to improve the quality of the survey and its reliability. Library administration and users may benefit from a thorough user satisfaction investigation if the biases can be avoided.

Kuan-nien Chen, Jiao-feng Chang-jien

Librarian, Kaohsiung Medical  
University, TAIWAN, ROC.  
Professor, Dept. of Fragrance and  
Cosmetic Science, Kaohsiung Medical  
University, TAIWAN, ROC.

\*Corresponding authors email:  
wc@kmu.edu.tw

**Key words:** Library user, survey bias, library questionnaire, user interview.

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### INTRODUCTION

A questionnaire contains as much data as the researchers expect to gather from the participants. It provides information but may emerge some controversial issues, including biases and unwanted variations (Daykin and Stephenson, 2002; Brace, 2008; Ruel et al., 2016). It is interesting to find that the quantitative data and qualitative ones often cause different views and feedbacks on the same object. For a reliable service survey, qualitative as well as quantitative information should both be employed. "Qualitative data, using appropriate methodologies to ensure rigorous gathering, analysis and presentation of data, provide the grounding for quantitative approaches by identifying useful indicators" (Weightman and Williamson, 2005: 21). However, the difference between such two methods of data collecting should be explored and discussed repeatedly to arise the fact and the reality concerning the particular themes. According to a study by Mazor et al. (2002), there was positive correlation between mean patient satisfaction rating and response rate in the actual patient satisfaction data. The researchers suggested

that response bias may influence the results of the satisfaction surveys considerably. Biemer and Lyberg (2003) consider that there can be many obstacles confronting the respondent on route to providing a response to a question in the questionnaire.

The research case for the study is a university with good study climate on campus. Approximate 7200 students, including about 1000 postgraduates, belong to seven different colleges. The university library is an important place for the students because it provides valuable electronic and printed resources, state-of-art IT facilities and comfortable study environment. The library staffs are well trained and professional in LIS. Most of them are young and energized. The library conducts a large scaled questionnaire survey every 2-3 years with at least 1400 participants. Most of them are students.

In the questionnaire, there are usually four parts containing about 80 questions in total. The four parts are collections, space and facilities, services, and promotion. All the questions except 3-4 open questions are structured

with 5-pointed Likert scale for participants to pick one option. The survey is anonymous and participants are free to respond to the questions.

The library staff collected the valid questionnaire and employ simple descriptive statistics to present the results. The study adopts the survey which was conducted in Dec, 2012. It has shown an interesting fact. That is, from the quantitative results, the researchers have found that the positive responses were high. That means, in terms of questionnaire responses, most of the library users were satisfied with the resources provided by the library. Many items got “agree” or “highly agree” result, occupied 80% to 90% in population while the results of open questions gathered lots of criticisms and complaints. More than two thirds of them are negative. The facts drew researchers’ attention. An interview way was then conducted to see what happened behind the interesting story.

## **METHODOLOGY**

The university library conducted a regular questionnaire survey before the study began. In the questionnaire there were several parts related to library services, namely user service, collections, facilities, staff and space. Each part contains a few questions for the participants to independently decide the satisfaction degree from 1-5 point. There was an open question in each part of the questionnaire and contributed some thoughts in written. The researchers discovered carefully the observable responses in the written results which were diverse to the statistical results in the same part. The researchers then ask the participants how they see the difference and what they can offer to the researchers about the causes of the difference. The researchers used individual interviews to collect the library users’ opinions. Before the interviews, each interviewee was fully advised the purpose of the interview, and then asked to view three things – the entire questionnaire, the results of the statistical analysis and comments of the open questions, and the interview schedules (questions) as follows.

### **Interview schedule**

1. Do you think there is any possibility in the structured questions themselves to lead you to pick the positive options? If yes, point out the question.
2. Do you think there is any possibility in the open questions themselves to lead you to write down the critics opinions? If yes, point out the question.
3. In general, can you assume what causes of the contradiction are?
4. Which way do you think can be used to gather more precise opinions from the participants, structured questions or open questions?

5. Which part of the library the users notice as a fault, collections, facilities, space issues, staff, or other?

6. When we prepare for the user survey next time, what should we notice to improve (survey tool and method, timing, scale, questions, and so on)?

7. Any other question or opinions you want to add?

The researchers chose the interviewees from the university students randomly. In total, fourteen students were willing to be interviewed. All of them did participate in the questionnaire survey conducted by the library a few months before the interviews. The interviews were held individually in a quiet and secure room. Before the interviews began, it took about 15 min to finish the preparation stage in which the interviewees were asked to read the questionnaire (blank) and listen to the researcher about the purpose of the study and the different points between the statistical results and the written responses to the questions of the survey. To ensure each interviewee was ready, the researcher confirmed with him or her by asking “can you tell such a difference that I just said” or “do you understand what I am saying”. Then the interview started immediately. The researchers completed the written statements based on the interviews and analyzed them carefully, and especially paid attention to the extraordinary opinions and ideas which could gain more thoughts and visions from the interviewees.

## **FINDINGS AND DISCUSSION**

Through the 14 interviewees who visited library frequently and would like to express their own opinions, the researchers collected qualitative data easily. The interview schedule focused on (1) the descriptive statement of the questions, (2) the layout of the questions, and (3) the choice of the questions.

The interviewees responded with abundant opinions. Most of them thought the amount of the question are too many. This may result in the participants to lose their patience and complete the questionnaire heedlessly. That is, some of the participants intended to pick the positive options (that is, “agree” or “highly agree”) in an arbitrary attitude.

Also most of the interviewees suggested to add another option – “I can’t answer the question” in each question. That is because some of the questions do not suit the participants to answer. They had no idea about how to pick the option. For example, one of the questions asks, “How do you think about the mobile learning facilities provided by the library recently?” Some of the participants have not found the opportunity to use the kind of facilities so that they may feel confused and hard to choose one of the five options which are all not suitable. In this case, most of the participants preferred to pick the positive options. One of the interviewee stated:

Open questions do urge us to express more particular ideas about the library. Those ideas can be analyzed and help to discover the causes about why some of the services are not so popular and some problems are still there. Another reason that I prefer open questions is they can release me from the structured questions.

Another interviewee stated that:

*Some of the facilities such as PC stations and the noise distract the users' attention obviously. The library must avoid the negative impressions like that..*

In response to the design and the layout of the questionnaire, one said:

*When designing the questionnaire, it'd better put it on the base of library users' viewpoints rather than staff's. That is, a better questionnaire can collect users' true opinions precisely rather than what the staff want to see and hear.*

Two other interviewees said:

*The library can use structured questionnaire for a "big vision" and open questions for some "narrow" issues. For example, for the structured questions, the participants are asked to evaluate the overall quality of library's promotion activities; in the open questions, the participants are free to write down how to improve the effectiveness of a particle promotion activity by adjusting the venue and the time. The designers should avoid using special terms (terminologies) instead of common used ones in the structured questions. Otherwise the participants get confused. For instance, the participants are familiar with "group learning area" rather than "interactive learning center".*

In addition, some other reasons may influence the quality of the survey result. Long questionnaire really bothers participants, especially when they are hurry to do something else. It was suggested that the questionnaire should not be longer than two pages. If the library really needs to collect so many data through a lot of questions, please divide them into different questionnaires and survey on different participants.

Another interviewee agrees:

*I think participants are easy to lose their patients because of too many questions. As a result, the participants chose the neutral option instead. That is safer than choosing "agree" or "not agree" but the participants didn't show up their real opinions in mind.*

To strengthen the effectiveness of user survey, another interviewee suggests:

*It'd better conduct some interviews after the large-scale*

*questionnaire survey. The in-depth interviews can possibly gain more information to explain why the participants think that way and how the library can make improvement to the problems.*

Another recommends:

*A better way to conduct the questionnaire survey, in my opinion, is to do it online. A good software can improve the outcome of the survey. In detail, when the participants find a particular question is not suitable to answer, he or she can refuse to pick options. This leads to more precise result of the survey. The researcher collect the survey data based on "question to question" mode rather than "copy to copy" one. That is, the statistics show the results broken into a question.*

More than a few interviewees regard the participants' complaints on the answers to open questions as a "spur" to the improvement of library services. Although it may cause some mistakes and emotional criticism, the points the participants indicated are to some degree useful and worth thinking further. For instance, two interviewees express that:

*Don't treat all the answers to open questions as criticism. Sometimes, the participants just want to add some ideas, suggestions and comments on the statements which cannot be explained efficiently in structured questions.*

*Some complains are good for the library because they can be considered as an expectation of the participants. The expectation inspire and urge the library staff to think and act more about the change in different ways of library services.*

For some participants, they want the library to be better than before. So they wanted to write some suggestions and pointed out the problems but this does not mean that the library is so unsatisfied or backward. The other interviewees remind that minor participants' opinions can only represent a small percentage of people.

Some participants demand higher standard performance in library sources such as improving the lights and air conditioner system. Apparently their opinions do not represent all the participants.

One of the interviewees agreed that there is a likelihood in the structured questions which leads the participants to pick the positive options. He continued:

*the participants are likely to pick the positive options of some "big questions" (that is, the questions related a big issue such as "how do you think about the reading settings in the library?") because those participants have already had overall impression of the library environment so that they are inclined to give a positive or negative options to the questions. This definitely alters not only the library staff but the users that we all must beware of the "recognition gap"*

problem.

*The problem may lead to the difference between the library and the users in judging the performance of library team and identifying the role of the library. As for the open questions, the interviewee considered that some participants used to explore their comments that have already existed in their minds for days. So as long as the open questions appear, the participants like to say something there.*

*Some of the questions indeed could lead the participants to pick positive or negative options. Normally, the questions concerning the environment (lighting, air-conditioning) and a weak point in the service (books in stacks are not placed in proper order) easily bring about the negative attitude. On the other hand, new products introduced recently that attract more attentions can give rise to positive attitude.*

Another interesting point is that the participants use social network tools quite often. This kind of use may affect the outcome of open questions to collect data. They used to write some short sentences to respond to various questions in the social network tools (eg, Facebook, Twitter, mobile phones) even they do not really intend to provide problems.

Some appreciate open questions because they can catch some participants' attention and willing to convey their ideas and comments. For library team, such ideas and comments are better than none.

*There is an advantage for open question. The participants answered to the questions and the library can then take the chance to examine how many mistakes the participants made because they don't realize the library. For examples, library users seldom pay attention to the procedure of recommending purchases to library. Once the users want to do the job, they often use the wrong ways and cause some troubles. The participants always grab the open questions to say something, even he or she has only a minor unsatisfied problem with the library service. In addition, the negative feeling and impression can recall the participants to express their complaints. Frankly speaking, most of the problems are not big deal at all.*

In summary, the questions in the questionnaire on the one hand must be as clear as possible or the participants could ignore the questions and therefore their opinions will not be gathered successfully. On the other hand, the design of the questionnaire should be participant-oriented, that is, logical layout (good structure), appropriate amount of questions and open questions provided. One thing must be born in mind: no matter how sophisticated the questionnaire is, there is always a bias between the questionnaire designers and survey participants.

## CONCLUSION AND SUGGESTION

It is interesting to find out something from the responses to the open questions. The bias that exists in the either open questions or structured questions can be actually minimized. The library survey questions should focus on the library's users' demands through showing the library goals (that is, borrowing rate of new arrivals in on the rise) and reminding the services (that is, new measures of ILL service). The library staff can tip the scales (structured and open questions) of such a bias by giving the survey participants enough time to work out the questionnaire and more vibrant description of questions. Behind the whole survey, there should a meaningful motive of searching the library users' opinions. It is noted that there is certainly no perfect questionnaire. In all the questionnaire surveys, there exist bias and mistakes, more or less. Using interviews before and after the survey may improve its quality. The interview prior to the survey aims to confirm and adjust the emphasis and the clarity of the questionnaire; the interview in the wake of the survey can clarify and patch up the data useful for the study. The researchers had better keep an eye on the confronting points especially while employing the both ways of collecting data and try to explore more valuable viewpoints to help explain the fact.

The authors suggest more extensive studies on the issue involved in library user's recognition of library services and use the questionnaire items/questions which are provided by library users rather than library staff.

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### Cite this article as:

Chen Kn, Jien JfC (2020). A qualitative analysis of the biases caused in a questionnaire survey. Acad. J. Educ. Res. 8(12): 490-493.

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