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A Guide for the Creation, Use, and Administration of Electronic User Surveys in Law Libraries

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A Guide for the Creation, Use, and Administration of Electronic User Surveys in Law Libraries

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Submitted to
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to fulfill course requirements for Current Issues in Law Librarianship, LIS 595,
and to fulfill the graduation requirement of the
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Driven by advances in internet technology, law libraries are in an environment that involves frequent change. Law libraries ultimately exist to serve their users. Internet technologies have posed serious challenges to the traditional book-based library system by changing the expectations of law library users. In the past, law libraries have faced other serious institutional challenges and they have adapted in order to overcome them.¹ The ability of law libraries to continue to exist as viable institutions in the future will ultimately depend on their ability to meet the changing expectations of library users.

Law libraries now frequently use online surveys to gather data on user opinions and expectations. Electronic surveys are frequently employed for several reasons. First, like other survey methods, electronic surveys are a method for measuring the opinions of many people. Second, as compared to other survey methods, electronic surveys are markedly less expensive. Third, with instant distribution and collection, electronic surveys yield fast results.

While surveys are frequently employed to gather data on users, little has been written about user surveys in the law library literature. A search of the law library literature for articles on user surveys yielded fewer than ten articles. Of the articles in the law library literature, several address computer programs for administering online surveys programs and several give tips for administering online surveys. No works in the law library literature systematically discuss the design and construction of electronic user surveys. Additionally, no published works in the law library literature discuss the use of surveys in research design or place user surveys in context by comparing them with other methods of measuring change.

The purpose of this paper is to contribute to the law library literature by providing a detailed discussion of the use of electronic surveys in law library settings. Section I provides an overview of the history of survey instruments in general. Section II provides a history of survey administration technologies. Section III provides a brief review of user surveys in the law library literature. Section IV analyzes the role of user surveys, along with other methods in library assessment. Section V provides a primer on the use of user surveys in academic law libraries. Section VI explores the legal, ethical, and institutional limits of using electronic surveys. Finally, Section VII provides a conclusion.

I. A Brief History of Survey Research

Online surveys largely trace their roots from mail, telephone, and earlier survey methods. Surveys, in one form, or another, have existed for many years. At a very general level, the history of survey research can be viewed in three phases. The first phase consisted of attempts to count populations, from ancient times to the latter half of the 19th century. The second phase included the development of the social sciences from the 1890s to around 1915. The third phase emerged with the development of sampling theory. Exploration of the developments during each of the phases will provide further explication of some of the ideas that are essential to modern survey instruments and procedures.

From ancient times, to the 1890s, surveys were essentially efforts at counting people in one form or another. Historic examples of early survey types of activities abound. Stretching back over 2000 years, populations were counted for many purposes including tax apportionment and military service.² In the United States, these types of activities took many forms, from the

¹ See Cadmus, Femi, *Things in Common: The Challenges of 19th and 21st Century Law Librarians*, 14 GREEN BAG 2D 201 (2011).

² Converse, Jean M., *Survey Research in the United States: Roots and Emergence 1890-1960*, (1987) at 1.

census to election polls.³ The common object of these endeavors was quite simple: to count all of the individuals in a population, or some segment of a population. In these early attempts, populations were counted in order to effectuate some other societal purpose or goal.⁴

The second major shift in the use of survey instruments coincided with the emergence of the social sciences in the later part of the 19th century. During this phase, those administering surveys often continued to count entire populations. The major development was in the purpose behind administering surveys. Rather than effectuate some military or political purpose, surveys began to be administered in order to learn something about social phenomena. One example of such work is that of Charles Booth in his survey of over 1,800 working class families in London⁵. Another example is in the work of WEB Dubois in surveying over 10,000 African Americans living in Philadelphia.⁶ During this phase in the development of survey instruments, the object of surveys went from simply counting individuals to using information collected from individuals in order to argue in favor of better social conditions.

The third major phase in the development of survey methods occurred with the emergence of sampling theory. Emerging with the development of probability theory in statistics, the idea behind sampling theory was that through studying a representative portion of a population, a researcher could create results that were generalizable to an entire population.⁷ This greatly lessened the burdens on the researcher, as it became possible to administer surveys without studying entire populations. During the early days of sampling, two schools of thought emerged. In one school, the act of sampling was to remain purposive, or that the researcher would look to the demographics of a population and purposely select a sample that was representative of the population.⁸ Under the other school, the act of sampling was to be random, with survey participants selected at random from some population.⁹ Ultimately, with developments in statistics random sampling prevailed and became the preferred method in many of the social sciences.¹⁰

Several developments in the field of statistics also helped to facilitate the rise of survey research. First, as above, the development of probability theory helped to contribute to sampling and ultimately random sampling. Other developments in statistics helped survey research to emerge by making it possible to analyze the results of the research. One such development was in measures for correlation. Statisticians like Francis Galton and Karl Pearson developed measures for assessing correlation, or the degree to which two variables are observed together.¹¹ Over time, statistical analysis became much more sophisticated and the availability of such analysis helped to facilitate the rise of the use of survey research.

Together, developments in survey methodology and statistics have allowed surveys to emerge as a viable research method. With developments in survey research methods and statistics, surveys have become a convenient method for studying a small group and generalizing results to a large population.

³ *Id.*

⁴ *See id.*

⁵ Booth, Charles, *Life and Labour of the people of London* (1969).

⁶ Du Bois, William Edward Burghardt, *The Philadelphia Negro: a social study* (2007).

⁷ *See* Converse, *supra* at 41-45.

⁸ *See id.*

⁹ *Id.*

¹⁰ *See id.*

¹¹ Stanton, Jeffrey M., *Galton, Pearson, and the Peas: A Brief History of Linear Regression for Statistics Instructors*, 9 JOURNAL OF STATISTICS EDUCATION 1 (2001).

II. Survey Technology Trends: The Rise of Online Surveys

As surveys emerged and developed, technologies used for administering surveys have also undergone many changes. Early surveys were administered through paper and pencil procedures. Alternative modes such as mail and telephone surveys were created, but they did not come in to widespread use for many years. Successive developments have automated many aspects of survey administration and have made surveys much easier and less costly to administer. Technological and societal trends have further reinforced the use of computers in survey research.

Initially, surveys were conducted through face to face interviews with members of a given population. The early survey research process was labor intensive and involved a great degree of human interaction. To gather survey data, research assistants were given a questionnaire and they would conduct face to face interviews with survey participants.¹² Often, the interviews would take place in the survey participant's home or workplace. Researchers would record their results, and the results would be compiled into data tables by data entry specialists. Ultimately, the survey results would be tabulated and analyzed by project administrators. Because of the time and expense involved, surveys were reserved for only the most important of information needs.¹³

Though they emerged early, mail and telephone surveys did not come in to wide use until they were facilitated by the rise of other technologies. Telephone surveys emerged first, in the early 1930s. The telephone survey went into wide disuse, however, after an incident in which a telephone survey conducted by the *Literary Digest* predicted that Alf Landon would win a landslide victory over FDR in the 1936 election.¹⁴ This failure was the result of sampling bias because only a smaller, affluent portion of the population owned phones at the time that the survey was conducted.¹⁵ Early phone surveys faced other technological barriers, as telephone connections were often poor, such that callers would have to shout in order to convey and receive information.¹⁶ Though introduced in the 1940s, mail surveys suffered a similar fate due to technological limitations. Only manual typewriters were available at the time and so the types of graphics and fonts that could be incorporated were limited.¹⁷ More importantly, due to technological limitations, copying was time consuming and produced low quality results.¹⁸

Computers were initially used to analyze information collected from survey research. Such uses began with the introduction of computers after World War II. Information about individual survey participants was tabulated on score cards and the cards were placed into room-sized computers for analysis.¹⁹ Early analysis involved a great deal of hand work in data entry and preparation. In the early days, "analysts delivered their "batch" to the queue at a computing center, and if all went well they received their results a few hours, or a day later."²⁰ As computer technology developed, ultimately, more sophisticated analytical models emerged and computers

¹² Dillman, Don A. et al, *Internet, Mail, and Mixed-Mode Surveys: The tailored design method* (2009).

¹³ *Id.*

¹⁴ Converse *supra* at 117-118.

¹⁵ *Id.*

¹⁶ Dillman, *supra* at 4.

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ Converse, *supra* at 382.

²⁰ Converse, *supra* at 383.

helped to speed up the analysis of survey results by obviating the need for basic human mathematical calculations.

Ultimately, with the proliferation of the microcomputer, in the 1970s, computers began to be used more in the collection of data. Early efforts at incorporating computers centered on their use in telephone surveys.²¹ Methods such as CATI, or Computer Assisted Telephone Interviewing emerged in the early 1970s.²² In CATI, a research assistant would read questions to survey participants and enter survey responses into a computer. The computer would then automatically tabulate the responses and create data sets.²³ CATI ultimately came into widespread use because of time saved in data entry and editing.²⁴

The emergence of the online survey is most directly rooted in the emergence of CSAQ, or computer assisted self-questionnaires. CSAQ was first implemented as an alternative to face to face interviews, in order to collect sensitive information from research subjects.²⁵ In the early process, survey participants would arrive at a central location and complete surveys on a computer terminal. Eventually, CSAQ began to be used in place of mail surveys. Survey participants would receive questionnaires on floppy disks by mail and they would complete them on their home computer before mailing them back to survey administrators.

Initially, the internet was not viewed as a viable method for administering surveys. Like the phones, even into the late 1990s, the internet was viewed as problematic for administering surveys because few people had access to the internet in their homes.²⁶ Additionally, there were strong concerns about the ability to keep the personal information of survey participants secure.²⁷ In spite of the early limitations, the potential of online surveys was recognized because of the cost savings.

The emergence of online surveys has been the product of a number of societal and technological trends. Societal trends, including gated communities and a general distrust for strangers have made in-person interviewing of household members more difficult. Other inventions including caller id and call blocking have made phone interviewing much more difficult, as respondents can now easily avoid unwanted calls. Moreover, the growth in the use of cell phones has frustrated the process of traditional telephone surveys by making sampling more difficult because cell phone numbers are not published.²⁸ Given these technological limitations and the greater cost of mail and phone surveys, the online survey has emerged as a convenient and inexpensive method for gathering information

²¹ Couper, Mick P. and William L. Nicholls, *The History and Development of Computer Assisted Survey Information Collection*, in *COMPUTER ASSISTED SURVEY INFORMATION COLLECTION* (Mick Couper et al eds., 1998) at 7-8.

²² *Id.*

²³ *Id.*

²⁴ *Id.*

²⁵ *Id.* at 13.

²⁶ Clayton, Richard and George Werking, *Business Surveys of the Future: The World Wide Web as a Data Collection Methodology*, in *COMPUTER ASSISTED SURVEY INFORMATION COLLECTION* (Mick Couper et al eds., 1998) at 553.

²⁷ *Id.*

²⁸ Dillman, et al, *supra* at 44.

III. Literature Review

In the law library literature, there have been few works that focus on surveys or research methods. Several articles have reviewed various survey administration methods and several have provided recommendations for questionnaire construction. While survey research has been the subject of several articles, thus far, no works in the law library literature have engaged in a systematic analysis of library user survey methods.

Several articles have provided reviews of survey methods and have described researchers' experiences while administering surveys. In a 1986 *Law Library Journal* article, authors Laura Speer and Robert Oaks described their experience in administering a mail survey.²⁹ In the article, Speer and Oaks, worked with the AALL to administer a survey to all of the AALL law librarians in Washington D.C. (some 600 librarians!). Based on cost, the authors decided to administer a mail survey. The AALL survey included a number of sensitive questions on salary and it had to be carefully constructed in order to avoid anti-trust issues. Through the article, the authors also highlighted several limitations of mail-based surveys. From the start of questionnaire construction to the finished analysis, the survey process took three years. Moreover, even with the help of a professional accounting firm, six months passed from the time that the survey was mailed out to the time that the results were published.

Several more recent articles have more squarely addressed library user survey methods. In "User Surveys: Libraries Ask: Hey How am I Doing?" Dwight King provides an excellent review of user survey methods.³⁰ Recognizing that survey questionnaires are an economical method to, "reach a large number of people with a large number of questions," King provides a number of suggestions for questionnaire construction and survey administration. Many of King's suggestions are helpful in creating meaningful surveys with a maximum response rate. Such suggestions include that the overall survey should be kept short and that the questions should be worded in plain, neutral language. King furthers the theme of ensuring maximum response rates in his discussion of survey dissemination, in which he suggests ensuring that survey participants remain anonymous, publicizing the survey, and offering incentives for survey completion.

Survey research methods received further treatment in discussions of the library of the future. In, "Student Services in the 21st Century", Jayasuriya and Brillantine discuss the use of survey techniques in assessing web 2.0 technology.³¹ The authors point out that web 2.0 technologies are changing the ways that students use the internet in order to seek information and they suggest student surveys as a method for tracking the changes. Jayasuriya and Brillantine suggest that libraries should analyze law students' use of web 2.0 technologies differently because they have different information seeking patterns and tend to value different aspects of the library than other types of graduate students. After a brief discussion of questionnaire construction, in which they repeat the mantra of "keep it short", Jayasuriya and Brillantine provide a more detailed review of several online survey dissemination methods, including LibQUAL+, SurveyMonkey, and Zoomerang. Jayasuriya and Brillantine also review focus

²⁹ Speer, Laura and Robert Oaks, *A Comprehensive Library Survey: The DC Experience*, 78 *LAW LIBRARY JOURNAL* 41 (1986).

³⁰ King, Dwight B., *User Surveys: Libraries Ask, "Hey How am I Doing?"*, 97 *LAW LIBRARY JOURNAL* 103 (2005).

³¹ Jayasuriya, H. Kumar Percy and Frances Brillantine M., *Student Services in the 21st Century: Evolution and Innovation in Discovering Student Needs, Teaching, Information Literacy and Designing Library 2.0 Based Service*, 26 *LEGAL REFERENCE SERVICES QUARTERLY* 135 (2007).

groups and usability testing as methods for assessing new technologies and suggest that libraries use such methods in order to tailor their involvement with web 2.0 technology.

In contrast to works which have discussed survey construction and dissemination technology in “Survey on the Value of User Surveys”, Linitz, Elwood, and Azadbakht discuss how law libraries use user surveys.³² Through the article, the authors note that while law libraries frequently administer user surveys, little has been written about the ways in which law libraries utilize the survey data that they collect.³³ In order to analyze how surveys are used, Linitz, Elwood and Azadbakht administered a survey to 115 law librarians. The cross-section of the types of librarians participating in the survey was fairly representative of law librarians as a whole: 27% of the respondents were from private academic libraries, 18% were from public law schools, 15.5% were from county law libraries, 15.5% from law firm libraries, and 5% from state law libraries. The authors found that reference services and electronic databases were the most frequent subjects of user surveys, with over 60% of respondents reporting that either had been the topic of a survey within the past three years. Contrary to fears expressed in the general library literature, the authors found that user surveys did not sit on the shelf, but instead that the majority of librarians surveyed reported that surveys were helpful in changing some aspect of the library policy or services.³⁴

Thus, given the frequency that surveys are conducted within law libraries, little has been written about survey methods in the law library literature. Through the sections that follow I hope to shed more light on surveys by providing an in-depth review of survey procedures, limitations, dissemination methods, and analysis.

IV. Useful Applications: User Surveys in the Context of other Library Assessment Methods

User surveys are likely best thought of as one of an array of tools in the librarian’s library assessment tool belt. Other tools in the belt include things like usability studies, user statistics, focus groups, and interviews. Each method or procedure is best used for measuring different types of things. Surveys are most adept at posing simple questions to a vast number of library users. Interviews and focus groups, in contrast, are better for providing detailed information from a small number of library constituents. In addition to the traditionally thought of applications, surveys may be useful for a variety of non-traditional purposes including marketing, public relations, and promoting a culture of assessment within the library.

On a broad, organizational level, libraries can be thought of as involving three groups of functions: inputs, outputs, and outcomes.³⁵ Inputs include, “the resources acquired, accumulated, and made accessible to support the library’s service mission and programs.”³⁶ Examples of inputs include things like total volumes in the collection, number of staff, and budget size. Outputs are the provision of library services.³⁷ Library outputs include things like number of books checked out, the number of reference transactions, and the number of classes conducted in the library. Finally, outcomes are the impacts and transformative effects that the library has on

³² Linitz, Karen Storin, Caitlin Elwood, and Elena Azadbakht, *Survey on the Value of User Surveys* (2011).

³³ *Id.* at 1.

³⁴ *See id.*

³⁵ Forrest, Charles and Amy J. Williamson, *From Inputs to Outcomes: Measuring Library Service Effectiveness through User Surveys*, 40 *GEORGIA LIBRARY QUARTERLY* 12 (2003) at 12.

³⁶ *Id.* at 12-13.

³⁷ *Id.*

stakeholders.³⁸ Outcomes focus on whether libraries are effective in providing services for library users.³⁹

As a research method, surveys are particularly adept at measuring outcomes. Inputs and outputs can be measured through simple counting statistics kept and recorded by libraries. Things like library budgets, number of volumes in the collection, number of reference transaction, and number of books checked out last year are easy to count and record. The measurement of outcomes, in contrast, requires more sophisticated research methods. Measuring outcomes often involves measuring attitudes and feelings that individuals may have toward the library.⁴⁰ Surveys are particularly adept at measuring individual attitudes and opinions.⁴¹ Because of the involvement of individual attitude and opinion in assessing library outcomes, surveys are an excellent tool for measuring outcomes.

While surveys are an excellent tool, they are one of several tools that can be used to measure library outcomes. Focus groups are another method that can be employed in measuring the impact that libraries have on users. The process has been summarized as follows, “Focus groups involve discussions among a small group of participants led by a moderator, who asks them to talk about a shared interest. The goal of the discussion is to collectively interview the members of the group and learn their perceptions about a topic and the basis for those feelings.”⁴² As compared with user surveys, focus groups provide much more detailed information on library users. In addition to participant responses, focus groups allow the researcher to observe non-verbal communications and to observe the ways in which the members of the focus group interact with one another. Focus groups may be a better research method than user surveys when the library researcher seeks detailed information on ways in which users interact with library services. As user surveys generally provide broad information on user attitudes, they may be inadequate when formulating ideas for improving library services.

Another method for measuring outcomes and interaction with library users is usability testing. Usability studies are frequently employed when libraries are considering whether to implement new technologies.⁴³ Often usability studies are conducted by either engaging users in in-depth interviews after they interact with a new technology or administering tests to users while they work with new technology.⁴⁴ As compared with questionnaires, usability studies yield more detailed information on the ability of users to interact with new technologies. As surveys generally measure attitudes or opinions, as a method, surveys alone may be inadequate when determining whether to implement new library technologies. Some combination of surveys, with other tools like usability studies may be necessary when deciding whether to implement new technologies.

Along with providing information about users, surveys can be used to produce a number of incidental benefits. Frequently, few library users are aware of all of the types of services offered by the library. Administering surveys can help to raise awareness of library services. Additionally, user surveys can be used to market library services to potential user groups. In their survey of library surveys, Linitiz, Elwood, and Azadbakht posed a question which identified a number of primary and secondary purposes for administering user surveys. These purposes

³⁸ See *id.* at 13.

³⁹ *Id.*

⁴⁰ See Forrest and Williamson, *supra* at 13.

⁴¹ See Dillman et al, *supra* at

⁴² Jayasuriya and Brillantine, *supra* at 142.

⁴³ See *id.*

⁴⁴ See *id.*

included, “Promote/ publicize existing services, Let users know the library cares about their ideas/input, gauging interest in proposed new services or resources, collecting suggestions for new services, and collecting suggestions for improvements to existing library services.”⁴⁵ Nearly 75% of those responding identified “promoting or publicizing existing library services” as a primary or secondary purpose and 72% reported “letting the users know that the library values their input” as a primary or secondary purpose.⁴⁶ Thus, in addition to traditional purposes, user surveys can be used as important public relations and marketing tools.

Another alternative reason for surveys is that they can be used in order to help to create a culture of assessment in libraries. Fostered by ARL efforts, many have come to advocate in favor of fostering a culture of assessment. The culture of assessment has been described as:

. . . an organizational environment in which decisions are based on facts, research, and analysis, and services are planned and delivered in ways that maximize positive outcomes and impacts for customers and stakeholders. A culture of assessment exists in those organizations in which staff care to know what results that they produce and how those results relate to customers’ expectations. Organizational mission, structures, values, and structures support behavior that is performance and learning focused.⁴⁷

Several works have recognized that fostering a culture of assessment helps to make it easier for libraries to grow and to adapt to change. As change has become a more frequent occurrence in libraries, many have recognized that the ability to adapt to change is crucial to a library’s survival as an institution. Administration of user surveys can help to foster such a culture in a number of ways. First, administering surveys regularly keeps library staff aware of user needs. Second, surveys help to promote decision making that is based on evidence, rather than anecdote or capricious whim. Third, surveys can help to encourage experimentation by providing an easy tool for analyzing successes or failures.

Thus, surveys are one among several tools that can be used to measure outcomes in libraries. Surveys work best in contexts where it is pose simple questions to a broad number of library users. In addition to traditional reasons, such as measuring user satisfaction, surveys can also be used to help to market the library and improve relations between users and staff.

V. A Primer on User Surveys in Academic Law Libraries

Through the subsection V (a)-(d), I provide a primer on the design and administration of surveys in academic law libraries. Though some of my comments may be tailored to academic law libraries, the ideas presented in the following subsections may be adapted and applied to other types of law libraries. Through the following subsections, I try to identify a number of general issues involved in creating and administering user surveys.

⁴⁵ Linitiz, Elwood, and Azadbakht, *supra* at 23.

⁴⁶ *Id.* at 13.

⁴⁷ Lakos, Amos, and Shelly Phipps, *Creating a Culture of Assessment: A Catalyst for Organizational Change*, 4 LIBRARIES AND THE ACADEMY 345 (2004) at 352.

V(a). Different surveys for different groups?

After deciding to administer a user survey, another decision worth considering is whether to administer different surveys to different groups. Often, law libraries have a number of different groups of stakeholders, or individuals impacted by library services. In an academic setting, these groups may consist of law students, professors, alumni, and attorneys. These groups may have differing information needs and behaviors. Additionally, the library may offer different types of services and different levels of service to each group. Moreover, opinions of one group may be of greater importance to the library and to library evaluators.

The existence of different groups may pose two sets of potential problems for those conducting surveys. First, the groups may be so different that different surveys are necessary. Research questions, information needs, and database use may be so distinct that the evaluator finds it desirable to pose different questions to each group. When this occurs, it may be necessary to administer questionnaires that are specifically tailored to the group under study. Another possibility is to include a screening question that directs members of each group to a different questionnaire.

The other set of problems occurs when the library seeks to provide higher levels of service to a particular group. Some groups of stakeholders may receive priority over others. In an academic setting, for example, the law library may be more concerned with the legal research needs of tenured faculty than with those of undergraduates attending the institution. It may not always be necessary to administer a separate survey when this occurs. It is possible to resolve this problem by clearly identifying the members of different groups and mathematically assigning differing weights to their respective survey responses.

V(b). To sample, or not to sample

After deciding to administer a survey and deciding upon a group to survey, the next decisions that must be made relate to sampling. Where a population is sufficiently small in number, sampling is unnecessary, as one can simply distribute the survey to all members of a population. In contrast, sampling may be necessary when populations are larger and survey administration budgets are tighter. Decisions on whether to sample depend on a number of considerations, including the tolerable margin of error, confidence level, the size of the population, and the amount of variation in survey responses that one expects in a particular population. The advantage of a random sample is that it allows for the results of a survey to be generalizable to a particular population.

Sampling is unnecessary in many law library settings because the size of the population of users is small. The relationship between sample size and the population size is not directly proportionate. In general, as populations get larger, the relative size of necessary sample needed for a given margin of error does not increase proportionately. For purposes of illustration, I include the following chart that I created from an online sampling calculator:

<u>Population Size</u>	<u>Necessary Sample Size</u>
100	92
200	169
400	291
800	457
1600	640
10,000	964
20,000	1013
100,000	1056
500,000	1065
1 million	1066

*assumes a 95% confidence level and a +/-3% Margin of Error

From the table above, one can see that for completing a survey with a margin of error of +/-3%, the difference between sample size necessary for a given population of 100,000 and a population of 1,000,000 is only 11, as a sample of 1056 is necessary for a population of 100,000 while a sample of only 1066 is necessary for a population of 1,000,000. Thus, as populations get quite large, sample sizes needed to create generalizable results do not increase proportionally.

Though there are several online calculators available, in order to discuss some of the concepts associated with choosing a particular sample size, I provide the following equation:

$$N_d = \frac{(N_p)}{(N_p - 1) (M/Z)^2}$$

Where: N_d is the desired sample size.

N_p is the size of the population being surveyed.

M is the desired margin of error

Z is the Z score associated with a particular confidence level

use 1.96 for a 95% confidence level⁴⁸

From the above, several things need to be known before choosing a sample size. Desired sample size and population size are fairly self-explanatory. Two variables in the equation above, M and Z deserve further explanation. M is variously termed as the margin of error, standard error, or sampling error. This is the measure of how closely the sample results reflect the true values of the population from which they are drawn. In surveys and polls, the margin of error is popularly reflected as +/- percentage, i.e. +/- 3%. By using +/- 3% we are saying that we want the value expressed in our sample to be within 3% of the true value in the population. In the

⁴⁸ Adapted from Dillman et al *supra* at 56.

equation above, simply enter the percentage of the desired margin of error: 3% = .03. While using smaller margins, like +/- 1% may yield samples that are more closely reflective of the population, the cost is that this requires much larger sample sizes. Z is the Z score or a measure that reflects the distance that an observed value is from the actual average of the population. This is derived by looking to the distribution of values under a normal curve. A 95% confidence interval is the number that is most frequently used in the surveying and social science literature and the Z score associated with it is 1.96. By choosing a 95% confidence interval, we are saying that 95 times out of 100, the values reflected in a random sample will be within the stated margin of error that we choose (i.e. within +/- 3%). As with margin of error, as we increase the confidence interval (i.e. a 99% confidence interval with a Z score of 2.58) the required sample size becomes larger.

For the purposes of simplicity, I have omitted a measure of population variation in the equation above. The equation above yields the most conservative estimate by requiring a slightly larger sample than may be necessary for a particular situation. It accomplishes this by leaving out a factor for variation in a population. Where there is a great deal of variation, slightly smaller sample sizes may be acceptable than the number arrived at in the above equation.⁴⁹

For those desiring to avoid a great deal of math, there are a number of online calculators available. A number of online calculators follow the format of the calculator taken below:

Sample Size Calculator

Confidence Level: 95% 99%

Confidence Interval (%):

Population size:

Do not use commas

Sample size needed:

Steps

1. Confidence Level: Click desired level
2. Confidence Interval: Enter %, such as 4.9 or 5.0
3. Population: Enter size if finite; otherwise, leave blank.
4. Hit calculate button

50

The online calculator is a simplified version of the equation that I provided above. First, chose a particular confidence level (95% or 99%). Next choose a confidence interval, or margin of error % and enter as a whole number, i.e. +/-5% is entered as 5.0. Third, enter the size of the population being surveyed, and finally, click on the calculate button.

If sampling is necessary and the goal is to generalize the results of a sample to an entire population, then a random sampling procedure should be employed. The goal of a random sample is to choose a sample of the population that is representative of the entire population. In order to accomplish this, random sampling provides a procedure, “that assigns to each of the sampling units of the population an equal and nonzero probability of being selected.”⁵¹ Theoretically, the characteristics of a sample chosen with perfect randomness would mirror those

⁴⁹ See Dillman, et al *supra* at 56-57.

⁵⁰ Taken from: <http://www.rogerwimmer.com/mmr9e/samplesizecalculator.html>

⁵¹ Frankfort-Nachmias, Chava and David Nachmias, *Research Methods in the Social Sciences* (7th ed. 2008) at 169

of a population. However, in practice, this rarely happens because samples generally differ slightly from the populations from which they are drawn. As above, the extent to which a sample varies from the population is known as sampling error, or the margin of error.

There are several procedures for choosing a random sample in internet and e-mail surveys. Likely the most simplistic method is list-based sampling. To accomplish this, one conducting a survey starts with a list of library users or e-mail addresses.⁵² Next, the survey administrator assigns a number to each e-mail address or user.⁵³ Finally, the survey administrator selects a sample by either using a random number generator, or by using a table of random numbers.⁵⁴ The list method can be used for web based surveys, as well as e-mail surveys, by contacting random library users and providing them with a .url for a particular web survey.⁵⁵ Sampling becomes more difficult when there are no lists available from which to choose a sample.⁵⁶ Luckily, however, in the law library setting, lists can be generated, as most libraries require users to register for accounts in one fashion or another.

Thus, there are few hard and fast rules with respect to choosing sample sizes. Sample sizes vary depending on the desired results. The discussion above is included for the purpose of thinking of some of the concepts that go into selecting a sample size. Sample sizes that are larger than the numbers required do not necessarily create survey results that are more reflective of a population. Statistically, all that is required is a random sample when one knows the population size, confidence level, and desired margin of error. In choosing a random sample, the goal is to engage in a process that gives all individuals within the population the same chance of being selected.

VI(c). Non-Response Error

A discussion of sampling is not complete without a discussion of some of the other potential sources of bias. Response rate is the rate at which individuals who receive the survey complete the survey.⁵⁷ The rate is calculated simply as the number of surveys received divided by the number of surveys distributed. Non-response error is the error in survey results that is caused by low response rates.⁵⁸ Essentially, low response rates can cause two types of errors in survey results. First, in surveys given to a sample of a population, low response rates effectively make the sample smaller. Second, low response rates cause bias when answers given to survey questions by those responding are different than the answers that would have been given by those who received the survey but failed to respond. Luckily, for those conducting internet and e-mail surveys there are a number of procedures that can help to increase response rates and minimize both types of non-response error.

Several works in the library evaluation literature address response rates. Academic library researchers have found that response rates to paper-based library surveys range from 50 to 90%.⁵⁹ This number varies based on the type of survey administered and the type of

⁵² See Dillman, et al *supra* at 45-47.

⁵³ See *id.*

⁵⁴ See *id.*

⁵⁵ See *Id.*

⁵⁶ *Id.*

⁵⁷ Frankfort-Nachmias and Nachmias, *supra* at 207.

⁵⁸ *Id.*

⁵⁹ Van House, Nancy, et al., *Measuring Academic Library Performance: A Practical Approach* (1990) at 28.

population surveyed.⁶⁰ Academic library evaluators have found that surveys focusing on circulation services have tended to have slightly lower response rates than those focusing on reference or general satisfaction.⁶¹ Additionally, such evaluators have found that graduate students tend to respond at higher rates to library surveys than undergraduates.⁶²

Online surveys may have slightly lower response rates than mail surveys. The early literature analyzing the differences between online and mail surveys found that response rates to online surveys were quite low- only a small fraction of those attributable to mail and telephone surveys.⁶³ There were several reasons given for the difference. One reason was that respondents inherently distrusted online surveys and that they failed to answer because of security concerns.⁶⁴ Another reason was that online survey respondents had difficulty responding because of technological limitations.⁶⁵ Later literature on the topic has found less of a difference between mail and online surveys. Studies have found that web surveys have similar response rates to mail surveys when the survey respondents receive reminders to complete their surveys.⁶⁶ Additionally, later works have found that the difference in response rates depends more on procedures employed, reminding, “it may be possible to achieve response rates that approach those of mail through the use of address based sampling and web surveys.”⁶⁷

One commonsense solution to problems caused by low response rates is to increase sample sizes. Where the survey researcher can predict approximately what the response rate will be, the researcher can simply adjust the sample size accordingly. Such an approach has been advocated in the academic library literature, “If your pretest data are inadequate for response rates, you may use the following default estimates: General Satisfaction Survey 80 percent . . . For a target of 400 responses, using the default estimates, distribute 500 questionnaires (400=80% of 500).⁶⁸ Oversampling has several drawbacks. First, oversampling does no good in surveys in which there is no sample and the survey is distributed to every member of an entire population. Second, oversampling can take away several of the advantages of sampling by adding time and expense to the processes of survey administration and data analysis.

In addition to oversampling, there are a number of other procedures that can be employed in order to increase response rates for web surveys. Empirical research has verified a number of suggestions for improving survey response rates. One suggestion is to contact survey respondents with varying messages over the course of a survey. A 2005 study found that in a survey of college undergraduates, response rates for survey respondents who received survey reminders were 37% higher than for those who received no reminder.⁶⁹ Though not directly supported by empirical evidence, the web survey literature provides three suggestions for the nature of post-survey contacts. First, the contacts should be used to promote the survey and to emphasize that results will be used to change the library in a way that helps survey

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² *Id.*

⁶³ Kaplowitz, Michael, et al, *A Comparison of Web and Mail Survey Response Rates* 68 PUBLIC OPINION QUARTERLY 94 (2004).

⁶⁴ *See id.*

⁶⁵ *See id.*

⁶⁶ *See id.*

⁶⁷ Dillman et al, *Supra* at 235.

⁶⁸ Van House, *Supra* at 28.

⁶⁹ Olson D. et al, “A Comparative Analysis of parallel paper, phone, and web surveys with and without incentives: What differences do incentive and mode make?” AMERICAN ASSOCIATION FOR PUBLIC OPINION RESEARCH (May 2005).

respondents.⁷⁰ Second, the messages contained in the contacts should include some degree of personalization and if multiple contacts are used for each respondent, the message should vary.⁷¹ Third, the survey administrator should tailor the number and nature of contacts to the population being studied.⁷²

Another suggestion for increasing response rates is to personalize contacts related to surveys as much as possible. In a comparison of surveys administered to university students, one study found that personalizing responses in e-mail invitations to take a web survey (from “Dear Student” to Dear “Name of Respondent”) increased response rates by nearly 8%.⁷³ Another suggestion with respect to personalization is to avoid bulk-emails. In one study response rates to a question sent via e-mail were shown to increase by 15% when the question was e-mailed to individual respondents, rather through a bulk group e-mail.⁷⁴ There is some art to personalizing messages. Attempts that include too much personal information can seem intrusive and cause the survey respondent to have privacy concerns.⁷⁵ Thus, trying to avoid bulk e-mail and adding a personal greeting are sufficient for the purposes of increasing survey response.

In addition to multiple contacts and personalization, the empirical literature has found that providing incentives increases response rates. A 2004 meta-analysis of 26 empirical studies of web surveys found that providing some material incentive to respondents at the beginning of a survey increased response rates by an average of 4.2%.⁷⁶ Of all of the types of incentives, researchers have found that provision of some small cash incentive at the beginning of a survey most dramatically increases response rate. While the research shows that providing incentives may be helpful in maximizing response rates, it may not be realistic in libraries with limited budgets as it can dramatically increase the costs of administering a survey. Creative library survey administrators may be able to think of incentives that are free to the library and that would be desired by library users.

A final suggestion that has received support in the empirical literature is to mix modes of survey administration where possible. Several studies have found that response rates are higher when survey respondents are provided with both internet and paper-based surveys.⁷⁷ The reason is simply that some survey respondents prefer paper based surveys, while others prefer electronic surveys. Offering surveys in multiple modes can increase response rates by, “getting responses from people who may be difficult to reach via the initial mode of data collection.”⁷⁸ Additionally, where a great number of survey respondents prefer paper, mixed modes can help to ensure that those who respond to the survey are representative of the sampled population. As with providing incentives, the library surveyor may want to be judicious in implementing such suggestions on mixing modes as they can increase cost. However, given the advantages, mixed modes may be worth considering in some user survey contexts.

⁷⁰ King, *supra* at 112.

⁷¹ Dillman, et al, *supra* at 276.

⁷² *Id.* at 278.

⁷³ Heerwegh Dirk, et al, “Effects of Personal Salutations in E-mail Invitations to participate in a Web Survey” 69 PUBLIC OPINION QUARTERLY 588 (2005).

⁷⁴ Barron, and E Yechiam, “Private E-mail Requests and the Diffusion of Responsibility” 18 COMPUTERS IN HUMAN BEHAVIOR 507 (2002).

⁷⁵ Dillman et al, *supra* at 272-73.

⁷⁶ Goritz, “Incentives in Web Studies, Methodological Issues and a Review” 1 INTERNATIONAL JOURNAL OF INTERNET SCIENCE 58 (2006).

⁷⁷ See Dillman et al, *supra* at 304-05.

⁷⁸ Dillman et al, *supra* at 304.

Along with suggestions for improving response rates supported by empirical research, there are other suggestions that make intuitive sense. One such suggestion is to consider the timing of survey administration. A number of different groups of law library patrons have strong demands on their schedules. It makes sense that individuals tend not to respond to surveys when they have more important things to do. The best advice is to consider the schedules of the survey respondents and to administer surveys during periods in which they have time to complete the surveys. This point has received support in the library survey literature, “Survey law students about their summer research experience soon after they return in the fall while the experience is still fresh in their minds . . . conduct your survey during a week in a typical month to get representative results.”⁷⁹ Timing is important to consider both to ensure higher response rates and to help with procuring survey responses that represent the population under study.

Another suggestion for increasing response rates is to re-assure survey respondents that their answers will remain anonymous. Respondents’ security concerns have been highlighted as a weakness of online surveys through the course of the literature on online surveys.⁸⁰ One concern is that unscrupulous individuals will gain access to the identities of survey respondents and use this information for fraudulent purposes.⁸¹ While much of this information is actually quite secure, a number of studies have found that individuals have heightened security concerns with respect to web and e-mail surveys. Moreover, security concerns have been echoed in much of the survey literature, “That the Internet has not become the primary survey mode of the times stems from . . . people’s lack of comfort with and trust in Internet technology.”⁸² Taking steps to ensure anonymity and minimizing the collection of personal data can help to alleviate security concerns and improve survey response rates.

Thus, like sampling error, non-response error can pose a major threat to the validity of survey results. Non-response error causes problems when it causes sample sizes to be too small and when answers of respondents are different than those that would have been given by non-respondents. Employing both empirically verified and intuitive procedures can help to increase web and e-mail survey response rates to a level that is commensurate with traditional mail and telephone surveys.

V(d). Methods for Online Survey Administration

Presently, there are a number of programs that can be used to disseminate online surveys. The programs all have a number of features that are useful for conducting library surveys. Overall, online survey administration programs help to make online surveys cheaper by automating many of the processes associated with survey administration. In spite of the overall cost-savings associated with automation, each online administration program has other advantages and disadvantages. Employment of one type of survey administration program or another can further help to ensure valid survey results by keeping the library survey researcher from having to make a number of discretionary choices with respect to question and questionnaire design.

LibQUAL+ is the most popularly accepted survey administration program in the library world. Developed by ARL and Texas A&M University in 2001, LibQUAL+ has been used to

⁷⁹ King, *supra* at 113.

⁸⁰ See Couper, et al, *supra*.

⁸¹ See *id.*

⁸² Dillman, et al, *supra* at 446.

administer user surveys in over 500 academic libraries. LibQUAL+ is an adaptation of SERVQUAL, a popular surveying system that has been used to measure customer service in for-profit business for a number of years.⁸³ LibQUAL+ questions are aimed at assessing library outcomes in four general categories: access to information, effect of library service received, library as place, and ability of user to operate independently within the library. Both LibQUAL+ and SERVQUAL assess outcomes by using a “gap” model, which attempts to analyze the gap between respondents’ perceived and expected levels of service.⁸⁴ To accomplish a gap analysis, LibQUAL+ asks survey respondents to rate three aspects of library services: the minimum level of service, the desired level of services, and the level that respondents perceive that they are currently receiving. The result of the LibQUAL+ survey is that numeric scores are generated for each respondent’s minimum, desired, and perceived level of service and “gaps” are calculated by simply subtracting the scores from one another.

There are a number of advantages to using LibQUAL+. First, the approach behind the service is fully vetted. LibQUAL+ has been employed in thousands of library and customer service surveys. A great deal of design, testing, and refinement has gone into developing LibQUAL+ questions and questionnaires. Essentially, this saves individuals using LibQUAL+ from having to re-invent the wheel. Those administering surveys with the service can safely rely on the questions, questionnaire design, and the analysis tools that are incorporated into the service. Another advantage with LibQUAL+ is that it allows for comparison between libraries. Around 200 to 300 libraries participate in LibQUAL+ surveys each year.⁸⁵ Every library using the survey essentially uses the same questions and generates the same types of numbers. This allows libraries to look to other libraries and learn from their successes or failures. In addition to comparison between libraries, another advantage with LibQUAL+ is that it allows comparison within libraries. Each LibQUAL+ survey asks the same questions and each results in mathematically comparable numbers as each question relies upon the same 1 to 9 scale. LibQUAL+ surveys can be used to compare different library departments and different groups of users. Additionally, by distributing successive LibQUAL+ surveys, the survey can be used to track changes over time.

While LibQUAL+ may have its advantages, it also has a number of disadvantages. The first concern with respect to LibQUAL+ is cost. LibQUAL+ requires the library to pay a membership fee of \$3,200 (in 2012) for a one-time survey.⁸⁶ Interested libraries can continue for future surveys by paying an annual subscription fee of \$2,200.⁸⁷ Another disadvantage of LibQUAL+ is that law libraries may be limited in their ability to compare with other law libraries because few law libraries have subscribed to the LibQUAL+ service. Since 2004, only between five and ten law libraries have participated in LibQUAL+ and only five have given more than one LibQUAL+ survey.⁸⁸ The participation level of law libraries has been much lower than other types of libraries, and law libraries may not be able to compare their results with similarly situated law libraries.

Another series of problems with LibQUAL+ centers on the content of the surveys themselves. First, from a broad perspective, LibQUAL+ has been criticized for relying only on

⁸³ Jayasuriya and Brillantine, *supra* at 139.

⁸⁴ Forrest and Williamson, *supra* at 14.

⁸⁵ Jayasuriya and Brillantine, *supra* at 139.

⁸⁶ http://www.libqual.org/about/about_lq/fee_schedule

⁸⁷ *Id.*

⁸⁸ Jayasuriya and Brillantine, *supra* at 139.

the perceptions of library users to measure quality. Borrowed from other customer service surveys, essentially, the idea is, “only customers judge quality, all other judgments are irrelevant.”⁸⁹ The problem with this is that there may be other input and output types of measures that are necessary in order to make complete determinations with respect to quality. Library users, like consumers generally, tend to be fickle and to follow trends. If, tomorrow, library users decided that there were too many shelves in the Library of Congress, would the Library of Congress suddenly become a lower quality library? The problem is that LibQUAL+ cannot, alone, supplant other methods for judging quality and making changes to library services.

For law libraries, another problem with the content of LibQUAL+ surveys is that law library users have tended to have different types of expectations than other types of library users. Stock LibQUAL+ surveys ask questions that give an equal treatment to four areas: affect of service, library as place, access to information, and ability to use services independently. Analysis of results from academic law libraries has revealed that law students value “library as place” and aspects of “access to information” much more than graduate students in other disciplines.⁹⁰ Based on these differences, the equal treatment to all areas given by LibQUAL+ may not be the best approach in law libraries.

In contrast to LibQUAL+, there are a number of alternative low-cost online survey administration tools. Several of the most popular tools include SurveyMonkey, Zoomerang, SurveyGismo, SurveyMethods, and KwikSurvey, among several others.⁹¹ The tools are all available for free or on a low cost subscription basis. Survey administrators using the tools without paying a subscription are limited in the number of surveys that they can distribute (100-250) and are also limited in terms of the types of analysis that can be done. Unlike LibQUAL+, the free and low-cost survey administration tools often have no pre-written questions. Many of the free tools require survey administrators to write survey questions and to choose individuals to be surveyed. With several of the low cost tools, paying for a subscription allows the survey administrator to access a database with sample questions.

Free and low-cost survey administration tools have several advantages. First, as compared to LibQUAL+, all of the tools cost much less and the tools may be especially useful for law libraries as they frequently lack resources to spend on library evaluation. As compared to distributing surveys without a program, low-cost services offer advantages by alleviating the need for data entry. Results from many of the low-cost survey tools are automatically entered into Excel files and presented to the survey administrator. Another advantage of the free and low-cost survey programs is that they include a number of features that make questionnaire design easy to accomplish. Several services, such as SurveyMonkey provide templates for different types of questionnaires. Also, a number of the free and low-cost services allow survey administrators to easily insert institutional logos in order to make the surveys look authentic. A final advantage of the low-cost programs is that they are completely customizable. The process of writing questions may force survey administrators to think of questions that are particular to the users in the institution under study.

In addition to the advantages, there are also disadvantages with using low cost survey administration tools. The first disadvantage is that the tools may not provide as much opportunity

⁸⁹ Saunders, E. Stewart, *The LibQUAL+ Phenomena: Who Judges Quality*, 47 REFERENCE AND USER SERVICES QUARTERLY 21 (2007).

⁹⁰ Jayasuriya and Brillantine, *supra* at 139.

⁹¹ Marie, Kiersten L. and Janine Weston, *Survey Says: Online Survey Tools for Library Assessment*, LIBRARY MEDIA CONNECTION (October 2009) at 50.

for comparison as LibQUAL+. Libraries wishing to compare themselves with one-another would have to agree upon and administer the same questionnaires. This lack of standardization may also frustrate efforts to track library data over time by making it easier for survey administrators to create custom questions each time that they issue a survey. Another disadvantage of the free and low-cost tools is that questions created by survey administrators have likely not been tested as much as the questions included in the LibQUAL+ surveys. As a result, the questions may suffer from defects that cause them to yield inconclusive or invalid results.

Thus, there are a number of programs that can be used to administer online surveys. While the low-cost services may have some disadvantages as compared with LibQUAL+, use of some service or another is almost necessary because of the time and expense that each saves by eliminating a great deal of data entry.

V(e). Question Design

The guess work associated with creating questions is something that steers survey administrators toward the use of consultants and higher-cost survey administration services. To eliminate some of the mystery, I present a review of the number of the basic types of survey questions. On a broad level, there are two basic types of survey questions: open-ended and closed-ended.⁹² Through open-ended questions, the survey administrator essentially asks a question to respondents and then allows them to react in their own words. In closed-ended questions, the survey administrator asks respondents to choose between a set number of responses.

A. Open-Ended Questions

Open-ended questions have some utility in surveys because of the richness of the information available from the responses. As with interviews, in open-ended questions, the survey administrator poses a question to survey respondents and asks them to respond in their own words. Like with interviews, open-ended questions allow survey administrators to gather more rich qualitative types of data about survey respondents. For meaningful results, respondents should be asked about things that they have personally experienced and they should avoid requiring respondents to refer to documents or other information when answering.⁹³ Time and space considerations are especially important when designing open-ended questions. Generally, open-ended questions should be answerable by survey respondents in a relatively short amount of time. Open-ended questions that demand lengthy answers are likely to have lower response rates.⁹⁴ Additionally, when designing open-ended questions, respondents should be given sufficient space in which to respond. Time must also be considered with respect to the analysis of responses. Answers to open-ended questions take much more time to analyze, as responses must be coded for any type of meaningful quantitative analysis. Given the time necessary for analysis, survey administrators would be wise to limit the number of open-ended questions in surveys distributed to a vast number of respondents.

There are a number of contexts in which open-ended questions are quite useful. First, open-ended questions are desirable when the researcher wants to learn how the survey

⁹² Frankfort-Nachmias and Nachmias, *supra* at 233.

⁹³ Frankfort-Nachmias and Nachmias, *supra* at 234.

⁹⁴ *Id.*

The choice among the list of databases is nominal because each category is mutually exclusive of the others and none of the above has a mathematical relationship to one another. In order to ensure meaningful responses, two guidelines are important to remember when designing questions with simple nominal responses. First, attempt to create an exhaustive list that includes all possible responses.⁹⁸ Second, make sure that the response categories are mutually exclusive.⁹⁹ In order to make the list of responses exhaustive it is often necessary to add an open-ended type of response category. In the above example, this would be accomplished by simply adding a category for “other” with a blank space (i.e. Which is your favorite legal information database: Lexis HeinOnline West LegalTrac Other _____)).

The ordinal scale is another scale that is highly important in surveys of library users. Ordinal variables are those, “at which all sets of observations generate a complete ranking of objects (e.g. from the most to the least), though the distances between the objects cannot be precisely measured.”¹⁰⁰ Essentially, like nominal variables, ordinal variables can be measured by giving a list of pre-determined responses. The difference between ordinal and nominal variables, however, is that they can be rank-ordered from most to least.

One type of frequently employed question that incorporates the ordinal scale is the ranking question. For example:

Which of the following services would you like to see the library provide in the future?
(Please number your preferences using 1 for the service that you would most like to see, 2 for the service that is the second most desirable to you, and so on until you have completed the list of all six.)

- _____ Faster internet connections
- _____ New computer terminals
- _____ 24-7 hour access to the library
- _____ A free espresso bar
- _____ 9-5 reference services on the weekends
- _____ Electronic access to old exam questions and answers

The ranking question essentially gives respondents a number of nominal categories and asks respondents to rank-order their preferences from most to least. Ranking questions are often difficult for respondents to understand and to complete correctly.¹⁰¹ As a result, they often have lower response rates.¹⁰² In order to reduce the burden on respondents and increase response rates, the number of categories in ranking questions should be limited.¹⁰³ Additionally, incorporating web technology that allows respondents to rank their responses by dragging and dropping them into their preferred order has been found to improve response rates.¹⁰⁴

⁹⁸ Dillman, et al, *supra* at 120.

⁹⁹ Dillman, et al, *supra* at 121.

¹⁰⁰ Frankfort-Nachmias and Nachmias, *supra* at 144.

¹⁰¹ Dillman, et al *supra* at 127.

¹⁰² *Id.*

¹⁰³ *Id.*

¹⁰⁴ *Id.* at 128.

In addition to ranking, ordinal scales are frequently incorporated in order to gauge user satisfaction. For example:

How helpful have our library's QuestionPoint answers been for you? (please choose only one response):

- Very Unhelpful
- Unhelpful
- Neither Helpful nor Unhelpful
- Helpful
- Very Helpful

The scale presented in the above question is ordinal, as each item can be mathematically represented as somewhat more or less than the other items. When used to measure attitudes, as in the above question, the scale is frequently referred to as a Likert Scale.¹⁰⁵ For purposes of analysis, the advantage of ordinal scales is that they can easily be coded by assigning numbers, i.e. not helpful=1, somewhat helpful=2 neither=3, etc. The numbers can be analyzed statistically and can be used to answer questions about attitudes of library users.

There are several important visual guidelines to remember when creating questions that incorporate ordinal scales. First, the choices on the scale should be ordered in a logical sequence, either vertical or horizontally.¹⁰⁶ Additionally, items in ordinal scales should flow either from left to right or from up to down.¹⁰⁷ For example, choices in a vertical five-point scale should look like the previous example and not like this:

- Very Unhelpful
- Helpful
- Neither Helpful nor Unhelpful
- Unhelpful
- Very Helpful

Presenting response options in a sequential fashion, vertically or horizontally, increases response rates and makes for meaningful responses by making it easier for the survey respondent to understand the question posed.¹⁰⁸ Another important visual guideline for ordinal scales is to ensure that the spacing between each response is equidistant. When the spacing in answers to survey questions is not equal, respondents are more likely to choose the answer with the most space.¹⁰⁹

There are also several important conceptual guidelines when designing questions with ordinal scales. First, scales should be balanced. Scale responses should include an even number of categories on both sides of the scale. For example, a five-point scale should include: Strongly Disagree/ Disagree/ Neutral/Agree/Strongly Agree and not Strongly Disagree/ Disagree/ Slightly Disagree/ Neutral/ Agree. Scales that are unbalanced, with more choices on one side than another will lead to biased survey results by forcing respondents to choose more of one side than

¹⁰⁵ Frankfort-Nachmias and Nachmias, *supra* at 422.

¹⁰⁶ Dillman et al, *supra* at 145-46.

¹⁰⁷ *Id.*

¹⁰⁸ *Id.*

¹⁰⁹ Dillman, et al, *supra* at 147-48.

another.¹¹⁰ Another conceptual guideline is that scales chosen should be relatively short in length. Scales measuring both directions, i.e. from dissatisfied to satisfied and disagree to agree should include only five to seven response categories at most.¹¹¹ Keeping the scale categories short makes improves reliability and response rates by making the questions easier for respondents to understand.

Another important conceptual guideline is to include only one concept in every question that is asked. Questions that include multiple concepts can be more easily misunderstood by respondents. Two examples illustrate this point:

1. To what extent do you agree or disagree that library reference services are satisfactory?

Strongly Agree Agree Neutral Disagree Strongly Disagree

2. How satisfactory are library reference services?

Very satisfactory Satisfactory Neutral Unsatisfactory Very Unsatisfactory

The first example above essentially mixes two concepts: whether respondents are satisfied and whether respondents agree that library services are satisfactory. The second example, in contrast, asks only about one concept: whether library services are satisfactory. Questions that mix two concepts are more burdensome for survey respondents because they must make more than one choice when answering questions.¹¹² Including only one concept in each question makes it easier for respondents to provide accurate answers to survey questions.¹¹³

Including only one concept in each question also helps survey administrators avoid several other pitfalls with respect to question construction. One such pitfall is the “double-barreled” question, or the question that includes two questions in one. For example:

Reference and circulation services are the best services in the library:

Strongly Agree Agree Neutral Disagree Strongly Disagree

By including reference and circulation into one question, the double barreled question above makes it impossible to measure different attitudes that the survey respondent may have with respect to each service. Such questions are likely to confuse survey respondents and to lead to invalid results.¹¹⁴ A better approach is to ask separate questions for each concept under study.¹¹⁵

A final guideline for arranging answers to survey questions focuses on the situation in which survey respondents are given the choice of expressing that they have no opinion. Including a “don’t know” or “no opinion” response is important when there is a significant portion of the population that may not have an opinion on some aspect of library services. When such categories are included in responses, they should be separated from the other categories in a scale. For example:

¹¹⁰ *Id.*

¹¹¹ *Id.* at 137.

¹¹² Dillman, et al, *supra* at 138

¹¹³ *Id.*

¹¹⁴ Frankfort-Nachmias and Nachmias, *supra* at 242.

¹¹⁵ *Id.*

Reference services are the best services in the library:

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

- Undecided
- Don't know

Visually, arranging the “no opinion” categories outside of the normal scale allows for more complete and accurate survey responses. Placing the “no opinion” categories at the end of the question encourages respondents to give more thought to the other responses and makes them more likely to choose a substantive answer.¹¹⁶ One study found that placing the “no opinion” responses in the middle of the substantive responses increased the likelihood of a no opinion response by about 8%.¹¹⁷ Other research has found that mixing the no opinion categories with the substantive categories skews results because of the visual layout that is created. Simply adding the “undecided” and “don't know” categories to the end of the scale in the above question causes a misalignment in the visual and conceptual midpoints of the scale. In the above scale, “neutral” is the conceptual midpoint and adding the “undecided” and “don't know” categories without spacing would make “disagree” the visual midpoint. Research suggests that survey respondents are drawn to the visual midpoint of scales when they determine how to respond to a question.¹¹⁸ Making “disagree” the visual midpoint may make the respondents more likely to choose disagree or strongly disagree.

Interval-level variables are more mathematically concrete than ordinal variables, but less concrete than ratio-level variables. At the interval level observations can be ordered and “the exact distance between each observation is composed of fixed and equal units.”¹¹⁹ Unlike ratio-level variables, there is no fixed zero point and ratio level variables are not measured by their distance from zero. Instead, at the interval level, variables are measured by comparing their distance to one another. For example:

How many times per week do you visit the law library?

- 0
- 1-3
- 4-6
- 7-9
- 10 or more

Interval level scales can be incorporated when the variable being measured can be ordered into categories that include equal distances between one another. The categories included in an interval-level scale can be ordered from most to least and they can be compared to one another as each category is a measurable distance from the others.

¹¹⁶ Dillman et al, *supra* at 147.

¹¹⁷ *Id.*

¹¹⁸ Tourangeau, R. Couper M. and Conrad F., *Spacing Position and Order: Interpretive heuristics for visual features of survey questions*, 66 PUBLIC OPINION QUARTERLY 265 (2004).

¹¹⁹ *Id.*

Ratio-level variables are the most mathematically concrete. The ratio level is characterized by a fixed zero point and equal intervals between the different units of measurement.¹²⁰ Ratio level variables are measured by calculating their distance from the fixed zero point. For example:

How many library fines have you paid in the last year?

- Zero One Two Three Four Five Six Seven

The above question incorporates a ratio level scale, as all of the choices would be measured by looking to the distance between the choice and zero. Other common ratio-level variables include things like age, weight, and temperature.¹²¹ To provide meaningful results, questions incorporating ratio level scales must have an exhaustive list of answer choices. As a result, it is often simpler to ask for ratio-level data in an open-ended question (i.e. How many library fines have you paid in the last year? Please fill in the blank _____).

Thus, there several different types of questions that can be used when surveying library users. Though they require more work to analyze, open-ended questions are valuable when seeking information that is deeper than that which can be learned from closed-ended questions. When constructing closed-ended questions, scales and categories need to be appropriate for the type of variable that is being measured in survey respondents. Many pitfalls associated with questionnaires can be avoided by ensuring that question responses include mutually exclusive categories, limiting response categories, ensuring that ordinal scales are short and balanced, and including one concept per question.

V(f). Questionnaire Design

In addition to question construction, overall questionnaire design can influence responses if not done correctly. By providing templates, free and low-cost survey administration programs automatically take care of many of the decisions that are associated with designing a questionnaire from scratch. Beyond the automatically provided formatting, there are a number of questionnaire design elements that should be considered when administering a library survey.

One consideration is to limit the use of matrix questions. Matrix questions are a combination of several questions incorporating the same scale into one set. Often such questions combine a number of questions that rely on the same Likert scale. For example:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Reference staff answers most of my questions	<input type="radio"/>				
Circulation staff is friendly	<input type="radio"/>				

¹²⁰ Frankfort-Nachmias and Nachmias, *supra* at 147.

¹²¹ *Id.*

Matrix style questions with many options and many questions can decrease response rates and lead to more invalid types of responses. The problem with large matrix style questions is that they can be hard for survey respondents to navigate.¹²² As a result, survey respondents are more likely to skip questions in their responses.¹²³ Response set bias occurs when survey respondents mark answers without considering each individual question.¹²⁴ Matrix questions produce higher response set bias because survey respondents are much more likely to simply fill in answers to the questions vertically, rather than examining and considering each individual question before answering.¹²⁵

Another suggestion for reducing survey response set bias is to vary the layout of survey questions. Response set bias also frequently occurs when questions on a particular topic are grouped together in one area of a survey.¹²⁶ In order to prevent this, the simplest method is simply to avoid clustering questions on one topic in only one area of the questionnaire. Response set bias also occurs when all survey responses rely on the same answers or the same scale. Varying the types of scales and answer choices from question to question helps to prevent survey respondents from giving answers that are biased based on the location of the questions. While adding some variation to response choices helps to eliminate response set bias, randomly switching from topic to topic in the questions makes surveys much harder for respondents to navigate.¹²⁷ When choosing question order, one suggestion is to proceed as you would in a conversation and to group questions on similar topics near other questions on the same topic.¹²⁸

As with decisions on question design and order, survey administrators should make judicious choices when inserting images into user surveys. Many electronic survey administration programs make it easy to include images in user surveys. While law library logos can help to prevent the web survey from being disregarded as spam, including images that relate to questions presented can bias question responses. Including images may bias responses by causing survey respondents to compare the response categories with the image provided.¹²⁹ For example, in one study, survey researchers found that respondents were much more likely to rate their health as lower when a picture of a healthy woman was inserted next to a question.¹³⁰ The authors concluded, “The use of images is a powerful tool for the survey design to enhance the measurement process, but given the richness of many images-especially photographs- and their power to attract attention these findings suggest that care should be taken when including images in web surveys. Images are contextual stimuli and like prior questions, they can systematically affect responses when their context has relevance to the survey question.”¹³¹

In addition to considering the effect of including images, survey administrators should consider the effect that graphic layout of questions can have on survey responses. Shading response categories and adding numbers to scales can cause survey respondents to interpret the

¹²² Dillman et al, *supra* at 179.

¹²³ *Id.*

¹²⁴ Frankfort-Nachmias and Nachmias, *supra* at 240-41.

¹²⁵ *Id.*

¹²⁶ Frankfort-Nachmias and Nachmias, *supra* at 241.

¹²⁷ Dillman et al, *supra* at 157-158.

¹²⁸ *Id.*

¹²⁹ Couper, Mick, et al., *Visual Context Effects in Web Surveys*, 71 PUBLIC OPINION QUARTERLY 623 (2007).

¹³⁰ *Id.*

¹³¹ *Id.* at 633.

shading and numbers, when responding to questions.¹³² One study assessing the effects of color and shading found that survey respondents were more likely to choose extreme ends of a scale when each end was shaded with a different color.¹³³ Additionally, the researchers found that including positive and negative numbers along with each response category had an even more dramatic polarizing effect on survey responses. (i.e. ○ Strongly Agree (+2) ○ Agree (+1) ○ Neutral (0) ○ Disagree (-1) ○ Strongly Disagree (-2)). All in all, the best approach is likely to avoid shading, coloring, and adding numbers to survey response categories.

Thus, in addition to question design, overall questionnaire design can influence survey results. While many of the low-cost online survey programs provide layouts and templates, they still leave some discretion to the survey administrator. By being mindful of question ordering, images, and graphic layout of response categories, survey administrators can help to eliminate these as possible sources of bias.

V(g). Analyzing the Results

A. Charts and Graphs

After designing and administering the survey, the next step is to analyze the collected data. Many online survey administration programs assist in the process by providing visual representations of the results through charts and graphs. Additionally, many online administration programs provide further assistance by putting results in Excel spreadsheets and other easily analyzable formats.

The frequency distribution is one type of chart that is commonly provided by online survey administration programs. Frequency distributions are essentially a chart that includes all of the possible responses to each question and indicates how many of the respondents chose each option.¹³⁴ For example:

Favorite legal database	Number of Respondents
West	60
Lexis	45
LegalTrac	15
HeinOnline	20

Frequency distribution charts give categories and the number of respondents who chose each category. Essentially, frequency distributions contain the same information as a graph, but they lack the x-y axis and the resulting bars and lines. Frequency distributions are an important first step in description and analysis since they provide a picture of the survey results.

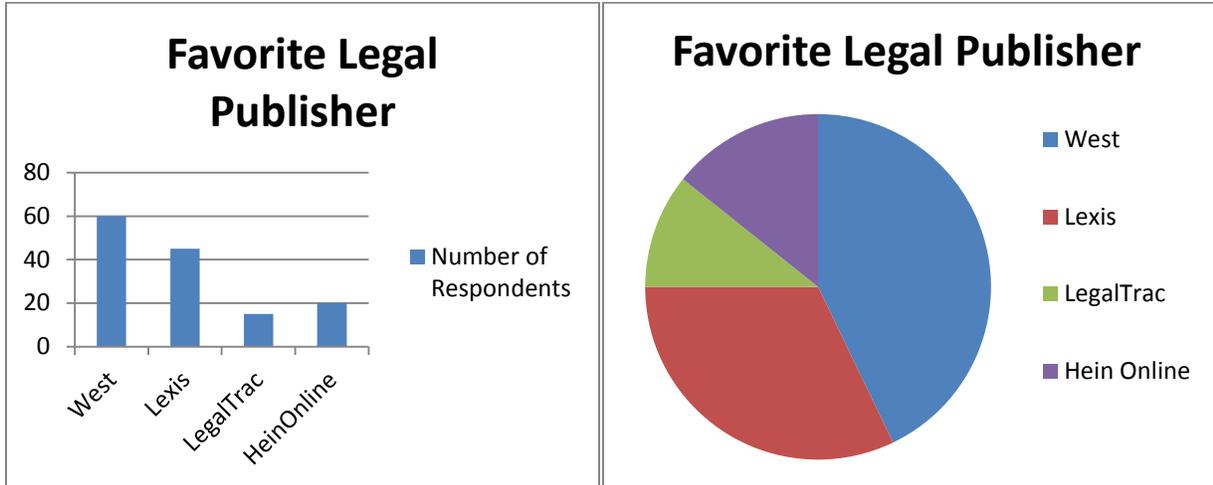
Graphs are also important in describing survey findings. Four types of graphs are especially important in basic representations of survey data: histograms, bar charts, pie charts, and line charts. Most online survey tools can be set to produce all four types of graphs in order to represent survey results.

¹³² Tourangeau, Roger, et al, *Color, Labels, and Interpretive Heuristics for Response Scales*, 71 PUBLIC OPINION QUARTERLY 91 (2007).

¹³³ *Id.*

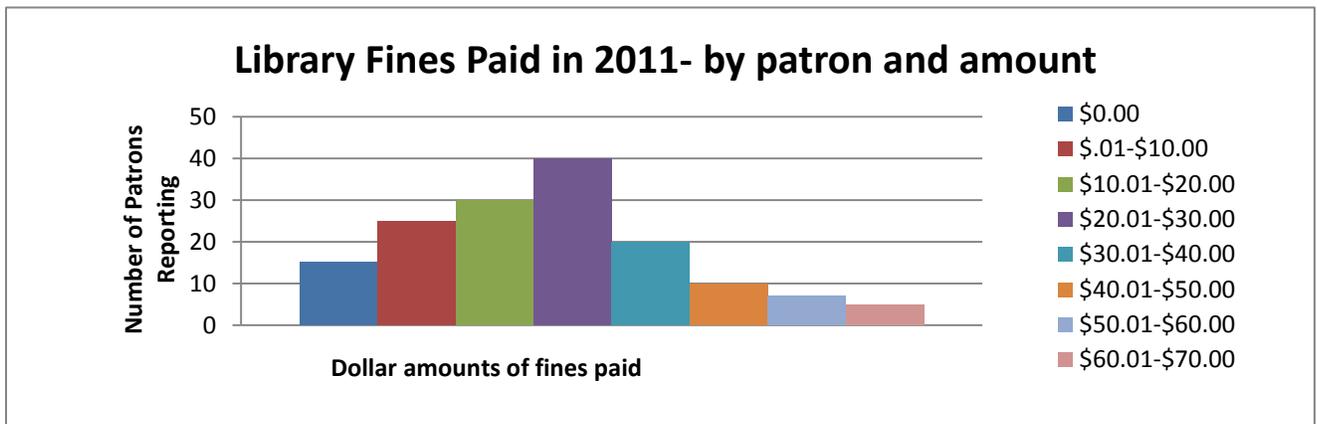
¹³⁴ Frankfort-Nachmias and Nachmias, *supra*, at 321.

Bar charts and pie charts are the most basic types of visual representations of survey results. Bar charts and pie charts essentially are a graphic representation of frequency distributions. For example, from the frequency distribution in the last example:



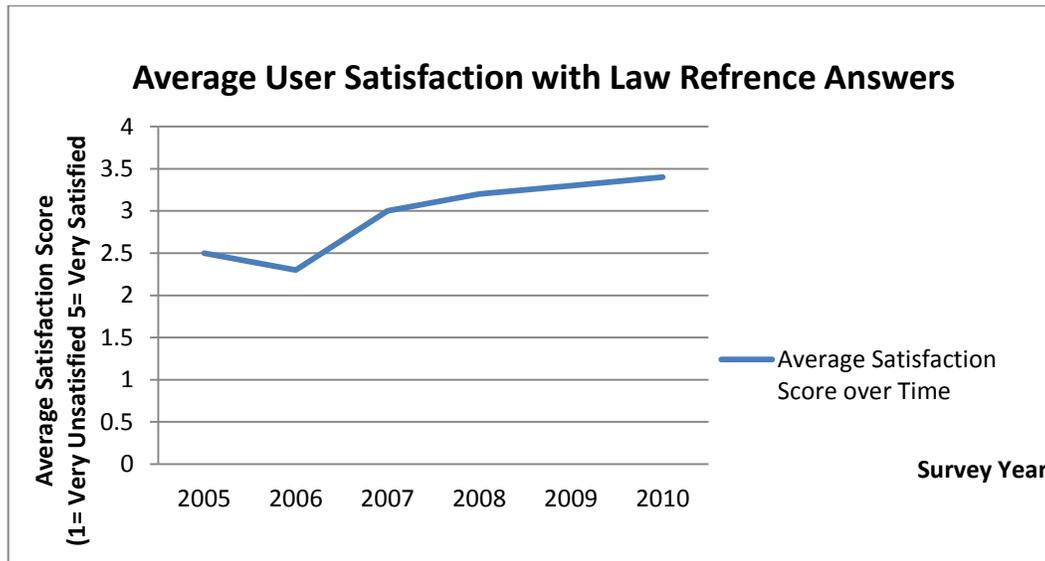
Both graphs above provide a basic graphic representation of a nominal variable: favorite legal database. The pie chart includes a little more analysis, as it provides a representation of the relative proportion of the survey respondents that made a decision in each category.

The histogram is another type of graph that can be used to provide a visual representation of collected data. Histograms can be used to represent survey results that are measured on the ratio or interval level. For example:



Histograms are like a bar chart, except that there is no space between the bars. Histograms, like the one above can be used to display the entire range of a ratio or interval-level variable. In the example above, the histogram depicts the range of library fines paid in 2011 (\$0.00-\$70.00) and it also depicts the number of patrons paying each fine amount. The advantage of histograms is that they can provide a picture of how survey responses are distributed.

A final type of graph that is commonly used to depict survey results is the line graph. Line graphs are most useful to summarize change over time and trends. For example:



Line graphs, as the above are especially valuable for representing trends and changes over time. As in the above hypothetical example, line graphs can be used when measuring the same variables in different library surveys over time.

B. Basic Statistical Analysis

In addition to producing graphs and charts, some mathematical analysis is generally necessary in order to describe the collected data. Many of the electronic survey administration tools provide some tools for basic statistical analysis. When more complex analysis is needed, it may be necessary to rely on more sophisticated software. There are a number of sources for free statistical analysis available on the internet. In addition, there are plugins for commonly used programs, such as Analyze-it for Excel that can be used to aid in analysis of the collected data.

There are two basic types of statistics that may be used in analyzing library survey data: descriptive and inferential. As the name implies, descriptive statistics are those that are used to describe some aspect of the population being surveyed.¹³⁵ Inferential statistics, in contrast, are statistics that are employed to analyze the reasons for the existence of some phenomena in a population under study.¹³⁶ Free and low-cost survey administration programs are generally capable of producing descriptive statistics, while more specialized statistical analysis programs are often necessary for inferential statistical analysis.

When performing a basic descriptive statistical analysis, there are three numbers that are important: the mean, median and mode. These numbers are also known as measures of central tendency because they measure the most commonly given answers to survey questions.¹³⁷ Perhaps the easiest measure of central tendency to calculate is the mode. The mode is the survey

¹³⁵ Frankfort-Nachmias and Nachmias *supra* at 321.

¹³⁶ *Id.*

¹³⁷ Mathews, Joseph R, *The Evaluation and Measurement of Library Services*, (2007) at 87.

response category that is most often chosen by survey respondents.¹³⁸ For example, in the sample question regarding favorite legal databases, the mode was the category for “West”, as it was the most popular choice among survey users (with 60 respondents choosing “West”). The mean is the average of all of the survey response scores. The mean is calculated by adding all of the survey response scores to a question together and then by dividing them by the number of responses. Analysis of the mean is most valuable when the variable under study is measured at the ordinal, interval, or ratio level because categories measured at the nominal level are discrete and not mathematically related to one another. Finally, the median is the survey response category that is in the exact middle of all of the responses. The median is the point at which 50% of response scores fall above and 50% of all survey response scores fall below.¹³⁹

Another important aspect of descriptive statistical analysis is to analyze the variation in the range of the results. One simple method is simply to assess the range of results by looking to the highest and lowest answers provided by survey respondents.¹⁴⁰ Another, more sophisticated, method is to calculate the standard deviation, which is a measure of the amount of variation in survey responses. Standard deviation is calculated by measuring the distance between each survey response score and the mean of all of the responses.¹⁴¹ Because the analysis requires each survey response to be evaluated, calculation of standard deviation is most often accomplished through computer assistance.

Finally, inferential statistics are important to incorporate in order to test hypotheses or assumptions about library users. Inferential statistical methods range from fairly basic to highly exotic. As sophisticated methods may require specialized training, a discussion of inferential statistical methods is beyond the scope of this paper.

VI. Legal, Ethical, and Institutional limits on Law Library User Surveys

In addition to practical limitations, there are several legal, ethical, and institutional limits that deserve consideration before surveying library users. Most legal, ethical, and institutional limits are aimed at doing one of several things: protecting privacy, ensuring confidentiality, or respecting individual autonomy. Ethical limits apply equally to both academic and non-academic law libraries, while some of the legal and institutional limits may be more important concerns in academia. By being mindful of privacy issues and obtaining informed consent when necessary, law library survey administrators can provide adequate protection for survey participants.

There are a number of ethical limits that apply to user surveys in both academic and non-academic settings. One set of concerns centers ensuring the privacy and confidentiality of survey participants. Invasions of privacy and violations of confidentiality can cause harm to survey participants. Better stated, “Invasions of privacy happen when research participants lose control of the types of personal information revealed about themselves. Privacy provides people with some protection against harmful or unpleasant experiences- against punishment and exploitation by others, against embarrassment or lowered self-esteem, against threats to the integrity and autonomy of the individual. . . . Violations of confidentiality occur when information about a research participant is disseminated to audiences for whom it was not intended without the

¹³⁸ *Id.*

¹³⁹ *Id.*

¹⁴⁰ Matthews, *supra* at 91.

¹⁴¹ Frankfort-Nachmias and Nachmias, *supra* at 340.

subject's authorization."¹⁴² With the advent of data mining, online tracking, and other unscrupulous marketing practices, privacy and confidentiality have become issues whenever asking individuals for personally identifiable information.

Law library survey administrators can address the privacy and confidentiality concerns of survey participants by following three suggestions. First, include as little personally identifiable information as possible in survey questions.¹⁴³ Second, never share personal information of survey participants with third parties.¹⁴⁴ Third, when disseminating survey results, ensure that individual responses remain anonymous by focusing on aggregate level data and omitting responses to open ended questions that contain personally identifiable information.¹⁴⁵

Another set of ethical limits centers on respecting the individual autonomy of survey participants. In order to accomplish this, survey administrators should obtain informed consent of participants in situations in which there may be some risk of harm to survey participants. Though most law library surveys involve little or no risk of harm, some discussion of informed consent is warranted because it may become an issue when engaging in other user evaluation procedures such as usability studies and participant-observations. Through the Department of Health and Human Services, the federal government requires informed consent to be given to participants in federally funded studies. Under the federal regulations, the basic definition of informed consent includes eight elements:

- (1) A statement that the study involves research, an explanation of the purposes of the research and the expected duration of the subject's participation, a description of the procedures to be followed, and identification of any procedures which are experimental;
- (2) A description of any reasonably foreseeable risks or discomforts to the subject;
- (3) A description of any benefits to the subject or to others which may reasonably be expected from the research;
- (4) A disclosure of appropriate alternative procedures . . . ;
- (5) A statement describing the extent, if any, to which confidentiality of records identifying the subject will be maintained;
- (6) For research involving more than minimal risk, an explanation as to whether any compensation and an explanation as to whether any medical treatments are available if injury occurs. . . ;
- (7) An explanation of whom to contact for answers to pertinent questions about the research and research subjects' rights, and whom to contact in the event of a research-related injury to the subject; and
- (8) A statement that participation is voluntary. . .¹⁴⁶

Though likely not necessary in most surveys of library users, informed consent should be given when there is any risk that survey participants will be harmed by participating in the

¹⁴² Frankel, Mark S. and Sanyin Siang, *Ethical and Legal Aspects of Human Subjects Research on the Internet: A report of a workshop*, available online at: http://nationalethicscenter.org/resources/187/download/ethical_legal.pdf

¹⁴³ See King, *supra* at 112.

¹⁴⁴ See *id.*

¹⁴⁵ See *id.*

¹⁴⁶ 45 C.F.R §46.116.

survey. Harm can be both physical and psychological.¹⁴⁷ Because of the risk of psychological harm, survey administrators should consider requiring informed consent whenever survey participants will be subject to deception as part of an experiment.¹⁴⁸

In addition to ethical limits, there are several legal limits that apply to the administration of surveys. For surveys in academic law libraries, one particularly relevant law is the Family and Educational Rights and Privacy Act of 1974 (FERPA) codified at 20 U.S.C. §1232g. Initially, FERPA was enacted to allow parents to review academic records of their children.¹⁴⁹ Since enactment, the types of records addressed by FERPA have expanded through over nine congressional amendments to the law.¹⁵⁰ FERPA protects the rights of parents and of students who are over the age of 18 and it applies to all universities that receive federal funding.¹⁵¹ FERPA grants parents and students over the age of 18 three substantive legal rights: the right to inspect and review education records, the right to challenge the contents of education records, and the right to consent to disclosure of education records.¹⁵² FERPA applies expansively to a “laundry list” of types of records that may be kept by an educational institution.¹⁵³ In spite of this, there is an exception that allows schools to disclose “directory information” which includes the student’s name, date and place of birth, telephone number, major or area of study, and school most recently attended. However, prior to disclosure of directory information, schools are required to give notice so that parents or adult students can object.¹⁵⁴ In spite of the exception for directory information, law library survey administrators should be mindful of FERPA when conducting surveys. Even with the exceptions, survey administrators should be careful not to disclose information that can be used to identify survey participants or responses, as this could trigger possible issues under FERPA.

Mandated by federal law, institutional review boards are another limit that is important to consider when administering surveys in academic law libraries. Under the National Research Act of 1974 (codified at 42 U.S.C. §201 and several other sections) federally funded research involving human subjects is required to be reviewed by an institutional review board (IRB). While research involving human subjects generally must be reviewed, there is an exception for survey research. Particularly, “Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior” is exempt from review, unless, “(i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.”¹⁵⁵ Thus, pursuant to the regulations, survey research is generally exempt from review by an IRB. However, like with FERPA requirements, potential IRB issues should be considered when there is a chance that individual survey participants may be identified in reports of survey results.

¹⁴⁷ Frankfort-Nachmias and Nachmias *supra* at 72.

¹⁴⁸ *Id.* at 72-73

¹⁴⁹ Department of Education, Legislative History of Major FERPA Provisions, 1, available online at:

<http://www2.ed.gov/policy/gen/guid/fpco/pdf/ferpaleghistory.pdf>

¹⁵⁰ *Id.*

¹⁵¹ *Id.* at 3.

¹⁵² *Id.* at 3-4.

¹⁵³ *Id.* at 1.

¹⁵⁴ 20 U.S.C.A. §1232g(a)(5).

¹⁵⁵ 45 CFR §46.101.

Therefore, before conducting a survey, ethical, legal, and institutional limits should be considered when there is any risk of harm for survey participants. Generally, these limits will not seriously constrain one's ability to conduct an effective survey of law library patrons. It is, however, important to be cognizant of such limits so that surveys cause no potential issues.

VII. Conclusion

Thus, online surveys can be quite valuable when measuring law library outcomes. Surveys are excellent tools to employ when the library evaluator wants to know a little bit about a vast number of library users. Surveys work well for gauging user satisfaction and measuring user opinions regarding the library. Though surveys are seemingly everywhere, it should be remembered that they are but one tool among several that may be incorporated in analyzing library performance. Online survey administration methods are important because they have lowered survey costs and made analysis much faster. Expensive survey administration tools such as LibQUAL+ make surveys quite easy to administer. However, even without access to expensive online programs, it is possible to create a survey which yields valid results by making good choices with respect to sampling, question design, and questionnaire design.