

IDENTIFYING FACTORS THAT INFLUENCE THE PROFESSIONAL USE OF THE
WORLD WIDE WEB FOR GOVERNMENT INFORMATION

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by

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CHAPTER I.

INTRODUCTION

The United States government is arguably the single greatest information provider on the globe. Democracy depends on the participation of a well-informed and responsible public. To create such an environment the government in the United States has guaranteed free access to government information. To do so, the Government Printing Office (GPO) was established by the Printing Act of 1860.¹ For almost 140 years, the GPO has printed a variety of government information and provided it free to the public through the Federal Depository Library Program (FDLP). Even with the addition of new formats for government information, the role of the GPO has remained constant. The introduction of the World Wide Web (WWW), however, has created new challenges for the GPO. Congress has insisted that government agencies provide their information via the WWW.² While the print version of government documents remains the standard and authoritative format, individual agencies now have even less incentive to distribute their information through the GPO. The result is a movement toward the WWW for not only distributing government information but searching for it as well.

Need for the Study

This trend has already gotten enough publicity that the general public searches for

¹ “Joint Resolution in Relation to the Public Printing” (23 June, 1860), 12 *United States Statutes at Large*, 117-120.

² “Paperwork Reduction Act of 1995” (PL 104-13, 22 May, 1995), 109 *United States Statutes at Large*, 163-185.

government information on the WWW every day. While the growth of the WWW has implications for libraries in general, the impact is staggering for depository libraries. The general public may be able to access information independently, however, much of the public remains unconnected to the WWW. As recently as October, 1997, 77% of the American public did not have WWW access from home³ and still needed to rely on their local libraries for WWW access. As government information increasingly moves to the WWW and the number of documents available only on the WWW grows, the depository librarian will need to make effective use of the WWW.

While prior studies examined government information on the WWW, most focused on the evaluation of WWW sites, the identification of good resources, and the exponential growth in the amount of information available. Attention has been paid to the issue of use, however, the studies proposed and performed are far more quantitative in nature. A study of users, their success, and willingness to consult the WWW for government information is necessary. With its strong tradition of patron service, the FDLP is a perfect subject for such a study. Since many end users still must rely on the expertise of depository librarians, it is useful to study their use of and attitudes toward the WWW to retrieve government information.

Purpose of the Study

The purpose of this study was to determine first if there was a relationship between a

³ U.S. National Center for Education Statistics, *Digest of Education Statistics 1998* : Washington, D.C. : Government Printing Office, 1999.

librarian's training and the willingness to use the WWW to retrieve government information and second to find what factors effected the success of that use.

Definition of Terms

For the purpose of this study, the term librarian refers not only to the traditional concept of the professional information provider working in a library, but to paraprofessionals and professionals alike working in a variety of environments. Librarians are referred to by a number of titles, especially in the corporate environment, so to avoid confusion, librarian is the preferred and used term.

In the study of government information, there has traditionally been a discussion of whether to use the term publication or document. Perhaps the best resolution of this debate is to refer to inter-agency information as government documents and that information provided to the public as government publications.⁴ The migration to the WWW only complicates the debate, therefore, documents, publications, and electronic information are referred to as government information.

The study often refers to depository libraries. A depository library is a member of the FDLP as a result of either volunteering for membership or having membership designated by Congress. Depository libraries fall into two categories: selective and regional. Selective depository libraries receive only a portion of output from the GPO. In addition to a designated core of

⁴ Judith S. Robinson, *Tapping the Government Grapevine: The User-Friendly Guide to U.S. Government Information Resources* : Phoenix: Oryx Press, 1998 : 3.

information the library selects information that will support the interests of its patronage.

Regional depositories receive everything that the GPO distributes and are subject to stricter guidelines than selective depositories.

The questionnaire used in this study was first announced to respondents by using a listserv. A listserv is an electronic discussion group. There are literally thousands of listservs on as many subjects. The listserv used in this study is moderated, which means that there is a person monitoring the messages posted to the listserv and ensures some degree of quality control.

Finally, the term library is used in this study for any information center. A number of terms are used in current literature. Rather than refer to an information center, media center, or any number of the current buzzwords, library will be used exclusively.

Limitations of the Study

This study employed a questionnaire and the questionnaire was posted on the WWW. It is therefore possible that the results of the questionnaire will be slightly skewed. Since participation requires the use of the WWW, respondents may be more inclined to use the WWW professionally. The opposite is true as well; potential respondents who may not use the WWW professionally are less likely to be included in the survey. Every effort, however, was made to make the process simple. A message was first sent to Govdoc-L, a listserv for the discussion of government information, to attract respondents. The message included a hyperlink to the questionnaire, assuring ease of use. Using Govdoc-L also limited the study to a specific audience; members of

that particular listserve. When response rate was found to be low, another message was sent directly to FDLP members, yet another specific audience.

CHAPTER II.

REVIEW OF THE LITERATURE

Studies of government information on the WWW fall into three categories. First, studies examine the amount of government information available via the WWW. Next, researchers are concerned with the evaluation of government sites on the WWW. Finally, the use of the WWW to retrieve government information is the focus of examination. Although it is unique, this study falls into the third category. An examination of the literature is necessary to place this study in its proper context.

Identification of Government Information on the WWW

Many of the studies in this category are concerned with pointing out good resources for government information on the WWW and target librarians and are good for keeping track of the ever-growing number of resources available. Most mirror an article by Kevin Fredette and Ann W. Henriksson which discusses a number of good resources and the impact that the WWW has on library spending. While the same conclusions can be drawn for libraries in general, Fredette and Henriksson focus on government information. Use of the WWW may cut collection development costs; technological considerations at least cancel out those savings and often

increase the strain on the library's budget.⁵ Ann E. Miller offers a similar discussion but pays attention to the inherent problems of WWW research as well. As she points out, WWW information is not tangible and offers problems to the researcher. It also allows government agencies to escape the accountability that their documentation provides.⁶

While these discussions are prominent and certainly beneficial to the library community, the most useful studies in this category center around studies of government agencies that provide information via the WWW. A study of local government authorities in the United Kingdom offers an excellent model for examining the use of the WWW to disseminate government information. This study surveyed 161 local authorities and examined all of their WWW sites for relevance and overall quality. In addition to finding an increase in the amount of local authorities on the WWW, the study found confusion in the use of the WWW for local government information because there is no central authority for the information. The study sought to identify the projected types of users for these WWW sites, the types of information provided within, the benefits of a local government presence on the WWW, and finally the problems of that presence as well.⁷

⁵ Kevin Fredette & Ann W. Henriksson, "Electronic Government Information: Benefits and Drawbacks for College and Undergraduate Libraries," *College and Undergraduate Libraries* 4 (1997) : 37-49.

⁶ Ann E. Miller, "U.S. Government Publications in Time of Change" *North Carolina Libraries* 55 (Spring 1997) : 22-26.

⁷ Harjinder S. Gill & Penelope Yates-Mercer, "The Dissemination of Information by Local Authorities on the World Wide Web" *Journal of Information Science* 24 (1998) : 105-112.

Evaluation of Government WWW Sites

In this category, researchers take the increased presence of government information on the WWW for granted and focus on evaluating the delivery of that information. Harry T. Sachs' study of local government on the WWW is a prime example of research in this category. Sachs surveyed 153 WWW sites that disseminate local government information. He found that less than one-third of the sites provided relevant or current information and that most suffered from disorganization; what he refers to as the "quantity=quality" approach. Sachs uses "quantity=quality" to describe sites that are simply loaded with disorganized information. It is not only uncommon, Sachs found that it seems to prevail on the WWW.⁸

Another study in this area was performed by Kristin R. Eschender et. al. in 1997. Here, the existing policy issues regarding the distribution of government information are first discussed in order to establish a framework for the examination of government WWW sites. Once that framework is established, the study goes on to establish criteria for evaluation. The criteria are broken up into two categories: Information Content Criteria and Ease-Of-Use Criteria. While the methodology of the study is described in detail, the findings are not yet available. The need for evaluation is clearly stated, and the criteria to do so are all provided.⁹

Using a questionnaire, Westat performed a study for the National Commission on Libraries and Information Science (NCLIS) to assess the general state of electronic government

⁸ Harry T. Sachs, "The Internet as a Source of Local Government Information: A World Wide Web Questionnaire" Master's research paper, Kent State University, 1996.

⁹ Kristin R. Eschenfelder, et al., "Assessing U.S. Federal Government Websites" *Government Information Quarterly* 14 (1997) : 173-189.

information. The study focuses on a variety of electronic information formats, however, there is much attention paid to the WWW. While the government does lack a coordinated effort to assess the dissemination of information via the WWW, the study did find that most agencies employ the same user-focused methods for evaluating their WWW presence. According to the report, focus groups, online user questionnaires, and videotaping users are the most frequent modes of evaluation. The study also included interviews with government Webmasters and noted that most agencies perform in-house evaluation to supplement the results of user-focused assessment.¹⁰

Use of Government Information on the WWW

With its focus on the use of the WWW searching government information, the current study falls into this category. Other research, however, can be classified here as well. These studies center around the examination of user logs on WWW servers housing government information to at least quantify the use of the sites. A very thorough study by Bertot et. al. considers all aspects of using a variety of software to log the usage of government sites.¹¹ While the utility of the study is unquestionable, such use does encounter its share of opposition regarding privacy issues. Even without the privacy issues, log files only offer quantities and at most the Internet Protocol (IP) address of the computer used to access the information. The human end user is not identifiable,

¹⁰ U.S. National Commission on Libraries and Information Science, *Report on the Assessment of Electronic Government Information* : Washington, D.C. : Government Printing Office, 1999.

¹¹ James Carlo Bertot, et. al., "World Wide Web Usage Statistics: Measurement Issues and Analytical Techniques" *Government Information Quarterly* 14 (1997) : 373-395.

nor is the success of the search. At the very least, this study brings the issue of site usage into the spotlight and gives at least one method for measuring that usage. Although the methods from this study were not used in the current study, the goal was to gauge attitudes toward and the use of the WWW for government information.

CHAPTER III.

METHODOLOGY

In order to study the factors that influence the use of government information on the WWW, librarians were surveyed. The questionnaire attempted to identify a typical librarian who uses government information, educational background and work environment, and use of the WWW for government information. The questionnaire was broken into three sections. The first section identifies the librarian's work environment. The type of library, whether it is enrolled in the FDLP, and the volume of government information handled by the particular library are all identified in the first section. Next, the librarian's educational and professional background were surveyed. This second section was primarily concerned with whether the librarian was trained on the use of the WWW either as part of the education process, or trained on-the-job. The results of this section are directly related to the third section of the questionnaire. Here, the librarian's attitude toward the WWW, use of the WWW, and success rate are identified. Success rate is measured by the respondent by identifying the number of successful WWW searches over the last ten attempts.

On September 9, 1999, the questionnaire was posted on the WWW. The initial targeted audience of the questionnaire was members of Govdoc-L, a popular listserv for government information professionals. Govdoc-L is a moderated listserv and includes government documents librarians, representatives of the GPO and other government agencies, students, and researchers interested in government information. On September 9, 1999, a message was sent to

Govdoc-L to advertise the questionnaire. Response rate was slow so on September 16, 1999, the same message was sent directly to a representative of every library enrolled in FDLP. While responses increased, the variety of the audience certainly decreased.

Recognizing the need to maintain the anonymity of respondents every effort was made to secure the process. Sending information via the WWW is not without risk. E-mail and other WWW traffic can be intercepted along its route. This is especially true of e-mail. Rather than simply send the results of the questionnaire from the HTML form to an e-mail account, a CGI script was written to gather responses, process them, and write them to a secure text file on the same WWW server that houses the questionnaire. This considerably decreases the possibility that responses can be intercepted. CGI scripting, however, does create some security concern. First, improperly written CGI scripts can open security holes on the server. The scripts written for this questionnaire use the Perl programming language and have been debugged to eliminate such concern. It is also possible to gather information on respondents. Scripts to gather any information on the respondent were purposely omitted from the CGI program.

The questionnaire was posted for sixteen-day period and was removed on September 25, 1999. The text file was taken off the server and opened as a spreadsheet in Microsoft Excel. Results were then manipulated and examined.

The message sent to librarians and the questionnaire itself can be found in Appendices A and B respectively.

CHAPTER IV.

DATA ANALYSIS

While the questionnaire generated enough responses to warrant a valid discussion of the results, response rate was too low to allow this sample to represent either a generalized population, such as librarians who may use government information in their resource repertoire, or even a more specific population like librarians working in FDLP libraries. The questionnaire recorded 208 unique responses in the sixteen-day period. While there is no way to determine the number of librarians who use government information, it must be a larger population than the number of FDLP libraries, which now stands at nearly 1,370.¹² Response rate, therefore, was far too low to extend any results past the population of respondents.

Before exploring the results of the questionnaire, a few deficiencies must be noted. Approximately ten percent of the respondents noted some difficulty answering questions in the third section of the form. This section dealt with their WWW usage and the common complaint was that the answer options seemed forced and may not reflect the real world of reference work. The open-ended questions provided a forum for disconcerted respondents to relay their use of the WWW. Those respondents that were critical of the questionnaire itself argued that the WWW is used when it is appropriate. Whether the WWW is used as a primary source, after consulting other resources, or as a last resort depends on the information need itself. This is certainly no surprise, however, the goal of these questions was to assess attitudes toward the WWW as a

¹² Library Programs Service (LPS), "Web Tour" Available [Online]: http://www.access.gpo.gov/su_docs/dpos/lpstour.html (September, 1999).

resource for government information. These answers were not to be viewed as absolutes and only reflect the participants' first response to the questions. Another complaint centered on the lack of an area for general comments on the form. Respondents used the open-ended question and the e-mail addresses provided to make general comments. Every effort was made to keep the form brief, and unambiguous, however, this focus may have opened the questionnaire up to criticism in other areas. In any study, criticism must be welcome and this is certainly no exception.

Even with the low response rate and participant criticism, the goals of the study were met through the questionnaire. The study was concerned with developing a profile of the professional environment and educational background of respondents and then to determine if these factors effect their use of and attitude toward the WWW as a resource for government information.

Library Information

This section was first concerned with the type of library in which the participant worked. They were asked to describe their library as academic, public, or special. While no definition was given for any of these categories, these terms are common in the professional literature. Academic libraries include university, college, secondary education, and elementary education libraries. Public libraries are not affiliated with any institution and are funded by the public that they serve through taxes and contributions. Finally, special libraries are found in a corporate or not-for-profit environment. Libraries in this category tend to serve a very specific population. These terms must not have been ambiguous because only one participant decided not to respond

to this question. Of the 207 respondents, the majority worked in an academic environment. Public libraries served as the next most common environment for respondents with special libraries were least common. For the distribution of library types, see Table 1 below.

Table 1.
Distribution of Respondents by Types of Library

Types of Libraries	Frequency	Percentage
Academic	139	67.00
Public	42	20.00
Special	26	13.00
Total	207	100.00

Of these libraries, 98.07% were members of the FDLP. The questionnaire was then interested in the number of years that FDLP libraries were enrolled in the program. The mean age of membership was 52.69 years and the median age was 35 years. Nearly half of these libraries have been enrolled between 20 and 40 years. For the complete distribution, see Table 2 below.

Next, the status of membership was sought by asking the percentage of materials selected by the library from GPO. FDLP libraries fall into two categories; selective and regional. All depositories receive a core of documents, however, selective status allows the library to choose which documents they will receive in addition to that core. Regional depositories must take everything that GPO prints and distributes through FDLP. Only 7.43 percent of participants worked in regional libraries. In addition to the status of membership, the percentage of GPO material selected was sought. Of all FDLP libraries, the median percentage of selected material was 27.50 and the mean percentage was 37.18. Of the selective libraries, the median percentage

of selected material was 27.00 and the mean was 32.15. For the distribution of these percentages, see Table 3 for all FDLP libraries and Table 4 for selective depositories only.

Table 2.

Distribution of Libraries by Years Enrolled in the FDLP.

Number of years enrolled in FDLP	Frequency	Percentage
1 to 20	29	14.80
21 to 40	95	48.47
41 to 60	10	5.11
61 to 80	16	8.16
81 to 100	15	7.65
101 to 120	19	9.69
Over 120	12	6.12
Total	196	100.0

Table 3.

Distribution of Documents Selected by all Depositories.

Percentage of documents selected from GPO.	Frequency	Percentage
Less than 1	2	.99
1 to 10	29	14.36
11 to 20	48	23.76
21 to 30	34	16.83
31 to 40	21	10.40
41 to 50	8	3.96
51 to 60	20	9.90
61 to 70	8	3.96
71 to 80	12	5.94
81 to 90	3	1.49
91 to 100	17	8.41
Total	202	100.00

This section was also interested in whether the library provided WWW access for the public, whether the government documents collection and general collections were integrated, and for

those integrated collections, whether the same professionals were responsible for providing reference services for both collections. While 96.15% of respondents worked in a library that provided WWW access for the public, 78.74% of participants worked in a library that did not integrate its government documents and general collections. This, however, had little effect on the reference responsibility of a majority of respondents. Although only 21.26% of participants worked in a library which integrated its collections, 88.59% were responsible for providing both government and general reference services to their patronage.

Table 4.

Distribution of Documents Selected by Selective Depositories by Percentage.

Percentage of documents selected from GPO.	Frequency	Percentage
Less than 1	2	1.06
1 to 10	29	15.51
11 to 20	48	25.69
21 to 30	34	18.18
31 to 40	21	11.23
41 to 50	8	4.28
51 to 60	20	10.69
61 to 70	8	4.28
71 to 80	12	6.42
81 to 90	3	1.60
91 to 99	2	1.06
Total	187	100.00

The results of this section are useful in creating a profile of the typical professional environment for the participants in this study. The typical respondent works in an academic library that has been enrolled in FDLP for anywhere between 20 and 40 years. The library is a selective depository selecting anywhere between 11% and 20% of everything GPO distributes through FDLP. Even though the government document and general collections are most likely

separate, the typical respondent is responsible for providing reference services for both collections. Finally, the library provides WWW access to for the public.

Educational Background

In addition to creating a profile of the professional environment of participants, the questionnaire also sought to create a profile of the educational background as well. In this section, respondents were first asked whether they held an MLS degree. The vast majority, 90.34%, do indeed hold an MLS degree. Next, the number of years that respondents have held the MLS was surveyed. While the median number was 16 years, the mean was 16.62. For the distribution of the years MLS held, see Table 5.

Table 5.

Distribution of Respondents by the Number of Years Holding MLS.

Number of Years MLS Held.	Frequency	Percentage
1 to 5	27	14.44
6 to 10	33	17.65
11 to 15	32	17.11
16 to 20	27	14.44
21 to 25	26	13.90
26 to 30	29	15.51
31 to 35	10	5.35
36 to 40	2	1.07
41 to 50	1	0.53
Total	187	100.00

Determining whether the MLS education included training in the use of the WWW was also a goal of this section. As Table 5 indicates, most MLS holding respondents received their

education before the emergence of the WWW in the early 1990's. It is, therefore, no surprise that only 13.37% of the MLS participants were trained on the WWW while pursuing their degree. Participants who did not hold the MLS fared only slightly better at 17.65%. Finally, participants were asked whether they received on-the-job training on the WWW. For this and further discussion, the population was broken into four categories. A similar percentage of each category did indeed receive on-the-job WWW training. The first category included all respondents, and 81.67% received training on the job. Next, all participants who did not receive WWW training as part of their education were placed in a category and 81.14% of these participants were trained professionally. Respondents holding an MLS were grouped together and 80.67% were trained on the job. Finally, 88.24% of the non-MLS participants received on-the-job training. With the proliferation of government information on the WWW, on-the-job training is becoming increasingly prominent. For comparison, see Table 6.

Table 6.

Percentage of Respondents Receiving On-the-Job Training in Using the WWW.

Categories.	On-the-Job Training	No On-the-Job Training	Total
All Respondents.	81.67	18.33	100.00
No Educational WWW Training.	81.14	18.86	100.00
MLS Holding Respondents.	80.37	19.63	100.00
Non-MLS Respondents	88.24	10.76	100.00

Again, a profile was one of the goals of this section. The typical respondent holds an MLS degree and has done so for between 6 and 15 years. WWW training was not included in the librarian's training, however it was part of on-the-job training.

WWW Use Information

In addition to establishing a profile of the typical respondent's professional environment and educational background, the first two sections served to create distinctions among the population. The categories of respondents were then used to examine whether any of these distinctions had an impact on the participant's attitude toward using the WWW for government information. The third section of the questionnaire focused specifically on WWW use. As some respondent's pointed out, the provided answers in this section may seem forced and may not reflect the real world of reference services, however, they are used to assess the subject's attitude toward the WWW, and should not be expected to evaluate completely the use of the WWW. Familiarity with a resource ensures the use of said resource, and the WWW is no exception. Actual use trends are more evident through examination of responses to the open-ended questions.

In this section, subjects were first asked to decide whether general information needs or government information needs require more use of the WWW. The results were only examined for those respondents who were responsible for both general and government reference as identified in the first section of the questionnaire. While government reference did require more WWW, the difference seemed to be slim with 52.42% choosing government and 47.58% choosing general. This remains relatively true across library types. Only respondents working in public libraries reversed this trend and again, the difference was slim. 55.56% of public librarians reported that general reference requires more use of the WWW. This is probably due to the patronage and the frequency of generalized questions in a public library setting. See Table 7 for comparison.

Table 7.

Percentages of WWW Use for General Reference Versus Government Reference.

Population.	Percent choosing general.	Percent choosing government.	Total
Academic Librarians.	44.74	52.42	100.00
Public Librarians.	55.56	44.44	100.00
Special Librarians.	47.62	52.38	100.00
All Respondents.	47.58	52.42	100.00

While library type did not have a major impact on responses to the question, the percentage of GPO materials received did. When the population is broken into libraries receiving 50% or less, and those libraries receiving 51% and more, the difference is substantial. Subjects working in libraries that receive 50% and less more closely resemble the general population of the study. In this group, 55.79% claim that general reference questions require more use of the WWW than government reference questions. Only 14.29% of subjects working in a library which receives 51% or more GPO output believe that general reference questions require more use of the WWW than government reference questions.

The amount of material received can effect the layout of an FDLP library and a patron's perception of the collection. If a library receives over 50% of GPO material, it may not integrate the collections. While a separate collection may not entirely separate the reference responsibility of the librarian, the collection may effect patron expectations. Patrons may associate a librarian with the collection, and ask more government reference questions. The size of the collection may also influence patron behavior. A library receiving more than 50% of depository material may gain a strong government-related reputation. A larger collection can be self-promoting and a

patron may decide to explore the possibility of satisfying an information need through the use of government information.

Subjects were then asked when they use the WWW. They were asked to choose between three possible choices: first; after consulting some other resource; as a last resort. Again, the answer to this question is largely dependent upon the information need itself, and can be influenced by a number of factors. For the purpose of this study, however, the answer is used to gauge an overall attitude toward the WWW. The majority of respondents refer to the WWW after consulting some other resource. For a distribution of the results, see Table 8.

To see whether the number of available resources influence when the WWW is used, the percentage of materials received from GPO was used to categorize the population. It may come as no surprise that collection size did indeed effect when librarians chose to consult WWW resources for government information. As earlier, the population was broken into those libraries receiving 50% and less, and those receiving 51% and more. While 42.65% of the librarians in the first category searched the WWW first, only 24.56% in the second category did so. This is most likely due to the number of resources available to the librarians in the second category.

Also, a larger collection requires more maintenance, which often serves to familiarize the librarian with the collection. For comparison, see Table 9.

Table 8.

Distribution of Respondents by When the WWW is Used.

When Respondents used the WWW.	Frequency	Percentage
First.	73	36.68
After consulting another resource.	119	59.80
As a last resort	7	3.52
Total	199	100.00

Table 9.

Distribution of When the WWW is Searched by Percentage of GPO Materials Received.

Percentage of GPO material.	First	After consulting another source.	As a last resort	Total
50% and less.	42.65%	55.14%	2.21%	100%
51% and more.	24.56%	70.18%	5.26%	100%

In order to determine whether a librarian's time spent in the field effected when the WWW was consulted, the population was broken into two groups. The first group consisted of librarians holding their MLS degree for 20 years and less, those librarians holding the MLS for between 21 and 41 years. There was a difference between the two groups. The trend, however, was a bit of a surprise. A slight case of technophobia was expected from more experienced professionals, however, 41.54% of participants in the second group compared to 35.40% in the first responded that they refer first to the WWW. While the difference is not overwhelming, the direction of the trend is surprising. This may be the result of the strong familiarity a more experienced professional has with the collection. Realizing the deficiency of the collection to answer a reference question, the more experienced professional may turn to the WWW quickly. For comparison, see Table 10.

Table10.

Distribution of When the WWW is Searched by Years MLS Held.

Years MLS held.	First	After consulting another source.	As a last resort	Total
1 to 20.	35.40%	61.95%	2.65%	100%
21 to 41.	41.54%	53.85%	4.61%	100%

The questionnaire next asked how WWW resources were used. Respondents were asked to choose between using the WWW as a primary source, to supplement other resources, or update dated material. As one respondent pointed out, the WWW is never considered a primary source in the strictest sense, however, for the purpose of this questionnaire, this response is used to identify those librarians who use the WWW as the main resource in answering a reference question. For the population as a whole, most respondents used the WWW to supplement existing resources. The next most popular use was as a primary source, with only a small percentage using the WWW to update dated material. For the distribution, see Table 11.

Like the question of when the WWW was searched, the size of the collection was identified as a possible influence on the response to the question of how the WWW is used. Again, the population was broken into those respondents working in a depository receiving 50% and less of GPO material, and those working in a depository receiving between 51% and 100%. A significant difference was recorded. While 34.29% of the participants in the first group used WWW resources as primary sources, only 21.43% in the second group responded the same way. With a better variety of available government resources in the collection, more respondents in the second group used the WWW to supplement those resources than participants in the first. For comparison, see Table 12.

Table 11.

Distribution of Respondents by How the WWW is Used.

How Respondents used the WWW.	Frequency	Percentage
As a primary source.	62	30.85
To supplement existing sources.	131	65.17
To update dated material.	8	3.98
Total	201	100.00

The experience of the respondent was also examined to see whether it affected how the WWW is used. Again, the population was broken into two groups, those respondents holding their MLS for 20 years and less and those holding the degree for between 21 and 41 years. Like the previous question, the difference in the responses was slim. Of the respondents in the first group, 27.83% used the WWW as a primary resource compared to 36.92% in the second group. The trend mirrors the trend in these groups for the last question, and most likely for the same reason. A more experienced professional is more likely to be familiar with the collection. For complete comparison, see Table 13.

Table 12.

Distribution of How the WWW is Used by Percentage of GPO Materials Received.

Percentage of GPO material.	Primary.	Supplementary.	To update	Total
50% and less.	34.29%	61.43%	4.28%	100%
51% and more.	21.43%	75.00%	3.57%	100%

Subjects were then asked to gauge their success when using the WWW by estimating the number of successful searches out of the last ten searches. The majority rated themselves well.

Only 31.94% claimed to have been successful 5 out of 10 times. The median number of successful searches was 8 and the mean was 7.92. For the distribution, see Table 14.

Table 13.

Distribution of How the WWW is Used by Years Holding MLS.

Years MLS held.	Primary	Supplementary.	To update.	Total
1 to 20.	27.83%	69.57%	2.60%	100%
21 to 41.	36.92%	58.46%	4.62%	100%

The amount of WWW training was examined to see whether it influenced how successfully they rated their WWW use. First, respondents receiving WWW training during their education were examined. While this population rated themselves highly, the median and mean averages were not much different than the median and mean for the entire population. No member of this group believed that they were successful less than 6 times out of their last 10 searches. The median score for this group was 7 and the mean was 7.5; both bearing a close similarity to the population as a whole. The same is true for those respondents who did not receive WWW training during their education, yet did receive some on-the-job training. The median score for this group was 8 and the mean was 7.96. Finally, those participants who received no WWW training rated their success as well as or better than the rest of the groups and the population as a whole. The median score for these respondents was 8 and the mean was 8.11. Surprisingly, the amount of and style of WWW training had little or no effect on the success rate of subjects. For comparison, see Table 15.

Table 14.

Distribution of the Number of Successful WWW Searches out of the Last Ten.

Number of successful searches.	Frequency	Percentage
0	1	0.53
1	0	0.00
2	2	1.05
3	0	0.00
4	4	2.09
5	8	4.19
6	18	9.42
7	26	13.61
8	61	31.94
9	36	18.85
10	35	18.32
Total	191	100.00

Table 15.

Median and Mean Number of Successful Searches Out of the Last Ten by Training.

Type of WWW training.	Median Response	Mean Response
During education.	7	7.5
On-the-job.	8	7.96
No WWW training.	8	8.11

The questionnaire then asked whether respondents preferred to use the WWW or more traditional resources when searching for government information. The responses were almost evenly split with 45.88% preferring traditional and 54.12% preferring the WWW. The number of years the participant held the MLS degree had little effect on this preference. Of the respondents who held their MLS degree for 20 years and less, 46.85% preferred traditional and 53.15% preferred the WWW. Of those who held their MLS for between 21 and 41 years, 44.58% preferred traditional and 55.42% preferred the WWW. While the years a subject held the MLS

did not significantly influence their preference, the level of WWW training did. The majority of the respondents trained on the WWW as part of their education, 67.86%, preferred the WWW compared to 55.07% of the participants who only received on-the-job training and only 35.71% of the subjects who did not receive any WWW training. For comparison, see Table 16.

Table 16.

Preference of Government Information Format by Amount of WWW Training.

Amount of WWW Training.	Prefer traditional.	Prefer WWW.	Total
Trained during education.	32.14%	67.86%	100%
On-the-job training.	44.93%	55.07%	100%
No formal training.	64.29%	35.71%	100%

The questionnaire concluded by asking respondents to comment first on the negative aspects of using the WWW and then the positive aspects. Since there was no space on the form designated for general comments, some participants used these questions to make general comments and to discuss the questionnaire itself. Many of the responses were repeated throughout the population. Common positive aspects included the ability of the WWW to distribute information quickly, the fact that the WWW is useful to supplement small government documents collections, the flexibility and convenience of the WWW, and the usefulness of accessing statistical information via the WWW. Some participants found that patrons just prefer WWW resources and it was very important to give them what they desired. The WWW also allowed respondents to provide information to phone and e-mail reference patrons without forcing them to come to the library. Due to the ability to search by keyword, the WWW format was cited as especially useful for resources like the *U.S. Code*, *Federal Register*, *Congressional Record*, and *Code of Federal Regulations*. In an academic setting, the WWW also reduces the

need to put a resource on reserve. Finally, most WWW indexes are cumulative and allow more convenient searching.

Most of the negative aspects focus on the technology and its impact. Regarding the technology, many respondents argued that the lack of a standard delivery format, and the use of plug-in software to access are roadblocks to retrieval. Hardware concerns also ranked high in these responses. Most complained that they receive slow transmissions, and have problems on both ends. Hardware problems in the library can make the WWW inaccessible, and server problems make specific resources unavailable. The impact of technology was a major concern as well. With its emphasis on currency, the WWW makes no promise of archival activity. Many fear that resources will only be available for a limited amount of time. The impact has also been felt in the expectations of the patron as well. Many believe that everything is on the WWW and have begun to devalue anything that is not. The inability to browse of documents was also a concern. In that vein, the illogical organization of many government sites make retrieval even more difficult.

CHAPTER V.

CONCLUSION

With the proliferation of information resources on the WWW, the general public is becoming increasingly more information dependent. Although the number of Americans with internet connection continues to grow, the vast majority remain unconnected. Even experienced users need help retrieving specialized information. This is especially true with regard to the system of government information. With its system of experienced government information professionals, the FDLP is a perfect aid to users searching the WWW for government information. Again, as government information increasingly moves to the WWW the depository librarian will need to make effective use of the WWW. It is therefore necessary to gauge the way depository librarians use the WWW, and the factors that influence that use.

As a result of this study, certain factors were identified that influence that use. Professional environment seemed to have a bigger impact than educational background. The size of the government documents collection as identified by the percentage of GPO materials selected by the library did impact the use of the WWW by librarians. In general, the WWW is used as a supplementary resource after consulting other resources. As collection size increases, librarians tended to use the WWW, but depend on it less. Surprisingly, WWW training and time spent in the field had little impact on how and when the WWW is used, however, the majority of those respondents receiving no training preferred traditional resources over WWW resources. Even with any differences among professional environment and experience or educational background,

the depository librarians in this study rate their WWW success high and seem to be incorporating the WWW well into their repertoire of government information resources.

APPENDIX A: QUESTIONNAIRE COVER LETTER SENT VIA E-MAIL

Re: Questionnaire of the Use of the World Wide Web for Government Information

September 9, 1999

I am a graduate student in the School of Library and Information Science at Kent State University and as part of the requirements for graduation, I am conducting a study to examine the factors that influence the use of the World Wide Web for government information. As a significant part of the study I am surveying librarians and information specialists regarding their use of Web-based government information.

Every effort has been made to ensure confidentiality and anonymity. Recognizing the potential security risks of sending information via e-mail, I have written a CGI script to gather and process the information from the questionnaire and have been careful to ensure the security of all involved files. I have also purposely omitted scripts that would gather respondent information. There are, however, security risks involved in sending any information over the Internet, therefore confidentiality and anonymity cannot be guaranteed.

Your participation is essential to this study and greatly appreciated, however, you may withdraw from participation at any time. There is no penalty of any kind if you should choose to not participate. This questionnaire is only open to respondents eighteen years of age or older. To participate, please fill out the questionnaire at <http://student.slis.kent.edu/~jsalem/questionnaire.html> . I will post the results in early fall and will e-mail notification to Govdoc-L. If you have any questions, please feel free to e-mail me at jsalem@slis.kent.edu or my research advisor, Dr. William Caynon, at wcaynon@slis.kent.edu . If you have any further questions regarding research at Kent State University, you may contact Dr. M. Thomas Jones at (330) 672-2651.

Sincerely,
Joe Salem Jr.
Graduate Student
School of Library and Information Science
Kent State University

APPENDIX B: QUESTIONNAIRE OF THE USE OF THE
WORLD WIDE WEB FOR GOVERNMENT INFORMATION

Library Information

Type of library?	Academic	Public	Special
Is your library enrolled in the Federal Depository Library Program (FDLP)?	Yes	No	
If so, how long has it been a member?	_____		
If enrolled in the FDLP, what percentage of depository material do you receive?	_____		
Are your general and depository collections integrated?	Yes	No	
If so, do you personally perform reference Services for both collections?	Yes	No	
Do your library provide World Wide Web (WWW) access to the public?	Yes	No	

Professional and Educational Information

Do you hold a Masters of Library Science (MLS) degree?	Yes	No	
If you hold an MLS, how long have you held said degree?	_____		
Were you trained in the use of the WWW during your education?	Yes	No	
If not, did you receive on-the-job training?	Yes	No	

WWW Use Information

If you provide both government and general reference, which questions require more use of the WWW?

Government

General

While searching for government information, when do you use the WWW?

First

After consulting some other resources
As a last resort

How do you use the WWW most?

As the primary source of information
To supplement existing resources
To update dated material

Of the last ten times you used the WWW for government information, how many were successful?

In general, do you prefer to use the WWW or More traditional resources?

WWW

Traditional

Please comment on the positive aspects of using the WWW to search for government information in the area below.

Please comment on the negative aspects of using the WWW to search for government information in the area below.

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