

## **An Analysis of Engineering and Technology Faculty Library Usage Patterns and Recommendations for Enhancing Interaction with the Library**

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# **Use of librarians' services by engineering and technology faculty**

## **Introduction**

It has been empirically observed, working as members of a library sub-committee at Purdue University North Central (PNC), that engineering and technology faculty members do not make adequate use of library services to facilitate search for literature related to their research and teaching. PNC is a regional university campus that is part of the Purdue University system with a population of approximately 3,300 full and part-time students, with growing engineering and technology departments. The College of Engineering and Technology is steadily growing and consists of electrical, civil and mechanical engineering departments, and computer and information technology, engineering technology and construction engineering and management technology departments. Even though PNC is a teaching-focused institution it expects a moderate amount of research from its engineering and technology faculty. The faculty members typically have a teaching load of four courses in the fall and spring semesters. The objective of this investigation is to determine the extent to which the engineering and technology faculty members avail of the library services. Additionally, this investigation attempts to obtain the faculty's perspective regarding the current state of interaction between the faculty and library service providers. Finally, the investigation attempts to look at the other side of the coin and obtain the perspective of the library service providers regarding the existing dialogue between the engineering faculty and reference librarian, and ways in which this dialogue can be improved.

As part of their research and teaching efforts, faculty typically must perform searches of literature for their research and teaching activities. Based upon informal interactions with the engineering and technology department faculty members, we found that the consensus was that they don't believe they need the help from a reference librarian and that they are capable of doing their literature review independently. However, on formal survey we learned that they would like to utilize the services of the librarian in order to facilitate better and more efficient searches. The disconnect between what the engineering and technology department faculty practically do and what they would actually like to do motivated us to propose a process and system to enhance and facilitate their use of the reference librarian to perform search.

Typically, when collecting literature for scholarship and teaching independently, the process would consist of doing searches through online databases using Google Scholar or online databases available through the university library. Generally, this is a lengthy, tedious process which provides mixed results. Often, much of the obtained literature results are not directly applicable to support the teaching or publication objectives and may exclude relevant material and/or resources. This uses up faculty time and resources in an inefficient and unproductive manner. It should be noted that some faculty that are well acquainted with their research area usually know the relevant research in their area and do not need the use of a reference librarian to find relevant research material.

We would like to emphasize that this research effort is focused on a small sample size, i.e., the engineering and technology departments at Purdue University North Central. We understand that larger campuses may have implemented systems that are effective for their institutions.

## **Literature Review**

Kumar & Kumar investigated the extent to which online resources were utilized by engineering, medical and management faculty on College campuses<sup>1</sup>. The goal of their study was twofold. First, they aimed at understanding the views of academics regarding hard-copy sources of information versus online sources. Second, they wanted to determine the extent to which academics utilized online sources and the reasons as to why they utilized them. To fulfill their goals, they conducted a survey among academics on campus with questions designed to obtain information about the experience faculty members had with performing research work online. Based upon their research effort, they concluded that despite the use of e-sources, faculty still preferred print sources. Additionally, they learned about the availability of on-line resources by a trial-and-error process or through the advice of friends and colleagues. Following their research endeavor, they recommended that librarians need to increase the extent to which finances are allocated towards expanding the availability of online resources for faculty research work. They also suggested that librarians should invest more energy and time in directing users towards valuable online material that can be used in their research work.

The above investigation was focused on the extent to which online resources were utilized by engineering, medical and management faculty. In our current investigation, we have narrowed the focus by restricting it only to a college-specific study within the College of Engineering and Technology. Additionally, our goal was to determine the extent to which academics in engineering use online sources, but we differentiated the process of online search into “independent academic search” and search performed by a reference librarian at the request of a faculty member. This was done to determine the amount of relevant information obtained by faculty when they perform their search independently, versus the amount of relevant information obtained when using the assistance of a reference librarian. This information could then be used to determine the efficiency of the searches performed by academics and to recommend an improved process to facilitate and improve the search of online resources using the services of an on-campus, professional reference librarian.

Brophy & Bawden compared the effectiveness of searching for online data via the internet search engine Google, versus using library databases<sup>2</sup>. They conducted a case study in which they assessed the systems in terms of coverage, precision, and quality of results. They found that searching online using the library systems provided better quality results. Additionally, they found that improving the skills of the searcher is likely to yield higher quality results from the library systems, but not from Google. Since Brophy et al have found that increasing the quality of the searcher could lead to higher quality search results using library databases, we were motivated to investigate the extent to which engineering and technology faculty members utilized the services of the on-campus professional reference librarian. The results of this investigation led us to recommend the implementation of an enhanced process and system to improve the quality of search results by using a higher skilled searcher as discussed in the conclusion section of this paper.

Additionally, Williams et al. examined the search habits of researchers and concluded that researchers use both e-resources and print resources<sup>3</sup>. They found that the value of e-journals was very high and that it was essential that researchers be able to work with and have access to resources conveniently. These conclusions motivated us to investigate the extent to which engineering faculty members avail themselves of the services of a qualified reference librarian to

assist them in conducting online searches in support of their research and teaching work in order to obtain the highest quality of search results in the most effective and efficient manner.

Maughan found that respondents to a survey expressed a desire for simpler and more integrated search systems<sup>4</sup>. Holland et al. found that aerospace engineering faculty made limited use of a librarian, sought out information alone or with the help of co-workers, and tended not to make use of information products and services oriented toward them<sup>5</sup>.

Magi and Mardeusz at the University of Vermont performed a study and collected qualitative information that helped librarians understand more about why students schedule consultations, their impression of the quality of help provided to them by librarians during those consultations, and what they found useful about face-to-face consultations despite there being online help available to them<sup>6</sup>. They found that students desired consultations for several different reasons, ranging from a lack of knowledge of how to begin their research to ensuring they have optimized the use of the available resources. Their projects ranged from very simple to multidimensional and complex. Prior to the consultations, several students had encountered hurdles while attempting to independently perform their research. Some of them were frustrated that their searches were inaccurate and they could not find relevant materials.

Students were helped in selecting databases, identifying keywords, and using search interfaces. Librarians assisted them in interpreting their professors' assignments, performing brainstorming sessions regarding developing an approach to their projects, communicating about potential topics, sharing knowledge about the subject, evaluating results for relevance and credibility, determining how unrelated pieces of information could be utilized in a paper, and providing advice on staying organized during a research endeavor during a semester.

Participants were unanimously positive about the value of the consultations, and were highly likely to make use of the service again and recommend it to others. Students' responses demonstrated that they appreciated having access to librarians' expertise. They found that working under the mentorship of a librarian helped them feel more confident about the credibility of information sources. Additionally, they found face-to-face communication to be useful. Several students mentioned that the consultation lowered their anxiety levels rooted in feeling overwhelmed. They also were happy to have the opportunity to build relationships with librarians, validated by the fact that many students voluntarily stayed in contact with the librarians after their consultations.

Fournier and Sikora performed a literature review of the different assessment methods that have been utilized in academic libraries to ascertain the impact of individualized research consultations offered to students<sup>7</sup>. Three overall assessment methods were identified: 1) usage statistics, 2) survey, and 3) objective quantitative methods. Several articles employing a usage statistics approach stated that they wanted to further their assessment of individual consultations. Numerous authors that implemented a survey method to survey their users described the value of the feedback to improve their service. However, they emphasized the subjective nature of this approach of assessment and stated that objective assessment methods would provide a better understanding of the impact of individualized research consultations. The few articles utilizing objective quantitative methods obtained mixed results. Overall, they concluded that additional research was needed in the assessment of individualized research consultations.

Baddyopadhyay and Boyd-Byrnes investigated the ongoing need for mediated reference services in academic libraries that is fueled by technology in today's times<sup>8</sup>. They completed a literature review where they studied the current patterns in reference services in academic libraries. Based upon their literature review, they concluded that skilled, knowledgeable professional librarians are still needed to provide effective and efficient reference services in a digital environment.

Based on our observations of the library usage patterns of engineering and technology faculty at our college, we decided to perform a study to verify these patterns and gather faculty opinions regarding potential utility of a system that could enhance support from library services and resources. First, we performed a survey in which we approached each faculty member in the engineering and technology departments with a list of questions (described in the next section). This survey provided us with information about their library search and usage patterns and their opinions regarding the potential utility of a system that could facilitate the usage of the university library and thereby enhance and streamline the approach they currently use to perform a literature search for information in support of their teaching and scholarly research activities. An in-depth description of this survey and approach used to analyze the survey results are presented in the next section.

### **Investigation Methodology**

As discussed in the introduction above, the main objective of this investigation was to determine the extent to which the engineering and technology faculty members avail of the library services on campus. Additionally, it was also attempted to gauge the faculty's attitudes in the context of potentially increasing / improving the state of interaction between the faculty and the reference librarian. Finally, the reference librarian's perspective of the aforementioned interaction was also obtained. To fulfil the first two objectives of this investigation, a survey was conducted amongst all the members of the engineering and technology faculty. To accomplish the third objective, the perspective of the reference librarian was obtained by means of a rigorous interview.

This section and the following two sections involve a description of the survey, and detailed description of the results and their subsequent analysis. Following this is another section that describes the results of the interview conducted with the reference librarian mentioned in the paragraph above.

The library resource usage patterns of Purdue University North Central engineering and technology faculty was investigated by conducting a survey (see Appendix A for actual survey form) among faculty in the department. There was a total of 19 full-time faculty members in the college of engineering and technology at the time of this study. Out of these, 14 faculty members replied to the survey. In the survey, the term 'background search' refers to a search for literature supporting the faculty member's scholarship and teaching activities. The survey determined the following:

- 1) The number of hours per month spent on literature search activity over the last year by each individual faculty member in the engineering and technology departments.

- 2) The amount of time spent independently doing the search, versus using on-campus library services (i.e., the reference librarian).
- 3) The percentage of the material that was independently acquired from an independent search that was relevant to the faculty member's research and teaching objectives.
- 4) The percentage of the material that was searched by a reference librarian that was relevant to the faculty member's research and teaching objectives.
- 5) A ranking of the extent the faculty members found the librarian's services useful.
- 6) A Yes/No response to indicate whether the faculty member would consider using a librarian's services to perform literature searches.

The results were studied with the goal of determining the total amount of time spent by the Engineering and Technology College in performing literature search work. The total time spent by the college as a whole doing search was divided between the total time spent by the entire college's faculty as a whole doing independent search work and faculty availing themselves of the use of a reference librarian's assistance to do the search for them. It was learned that for the faculty's independent search efforts, not a significant proportion of the material gathered was relevant to the faculty's teaching and/or scholarship goals. The survey results showed that faculty members hardly made use of the librarian's services to perform their searches, so there was an insignificant amount of information pertaining to the ability of the librarian to obtain information relevant to the faculty member's goals. These conclusions are expressed in terms of the number of productive hours per month invested in obtaining literature research material both by independent faculty search and through the reference librarian's efforts. Finally, survey-based feedback from the department as a whole was obtained regarding their perception of the benefit of using the reference librarian and whether they would want more assistance from the on-campus library facilities to perform their literature research work.

## Discussion

### *Survey Results*

The results from the survey are presented in Table 1. The process used to analyze and interpret these results is discussed in the next section of this paper.

Table 1: Engineering and Technology Faculty Library Usage Patterns Survey Results

Survey Question***	Faculty 1*	Faculty 2	Faculty 3	Faculty 4	Faculty 5	Faculty 6	Faculty 7
1 [hrs/mo]	4	4	40	8	2	25	50
2 [%]	100/0	100/0	100/0	100/0	70/30	100/0	90/10
3 [%]	60	50	75	10	80	100	90
4 [%]	n/a	n/a	n/a	90**	n/a**	n/a	n/a**
5 [0-4]	n/a	n/a	n/a	n/a	3	n/a	n/a

6 [y/n]	y	y	y	y	y	Y	y
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Table 1 (continued)

Survey Question***	Faculty 8*	Faculty 9*	Faculty 10*	Faculty 11*	Faculty 12*	Faculty 13*	Faculty 14*
1 [hrs/mo]	2	10	1.5	10	20	20	3
2 [%]	100/0	100/0	100/0	100/0	100/0	100/0	100/0
3 [%]	80	75	80	90	100	60	75
4 [%]	n/a	n/a	n/a	n/a	n/a	n/a	n/a
5 [0-4]	n/a	n/a	n/a	n/a	n/a	n/a	n/a
6 [y/n]	y	y	y	y	y	y	y

Table Legend:

\*Faculty 1-14: Faculty Member 1 through Faculty Member 14

\*\*Data inconsistent with respect to question 2. F4 stated that he/she did not use the librarian's services at all (in question 2), but stated that 90% of the librarian's literature search material was relevant to his/her research. F5, F6 stated that they used the librarian's services to gather literature research material (in question 2), but did not state the percentage of this material that was relevant to their objectives (in question 4).

\*\*\*Q: see survey in Appendix A

### Survey Analysis

The following analysis was performed using the data from Table 1:

- Based upon the answers to survey question 1 (Appendix A, Q1: *Over the last year, approximately how many hours did you spend on background research? i.e., background searching to acquire data that would be used for either scholarship activity or classroom teaching*), the total number of hours per month over the last year spent by all the faculty members (14 in total) within the College of Engineering and Technology on acquiring background research work for their teaching and scholarship was calculated. Result = 199.5 hours.
- Based upon the answers to survey question 2 (Appendix A, Q2: *Of the total time entered in Question 1, approximately what was the breakup between the percent of time you independently acquired this material (i.e., independently conducted internet searches, physically went to the library and looked for material yourself using library resources / databases), and the percent of time you indirectly acquired the material by using a librarian (i.e., search done by a reference librarian by providing him/her with keywords relevant to your search?)*), the total number of hours spent by the faculty members doing the literature search work independently was calculated. Result = 193.9 hours.
- Based upon the answers to survey question 2, the total number of hours spent by the reference librarian in doing the literature search for all the faculty was calculated. Result = 5.6 hours.
- The percent of time that the faculty members performed literature search independently. Result = 97.2%. Therefore, only 2.8% of total search was done by the reference librarian.

- Based upon the answers to survey question 3 (Appendix A, Q3: *Approximately what % of the material that you independently acquired for yourself via your searches ended up being actually relevant and useful for the scholarship or classroom activity for which it was intended?*) the total number of hours/month over the last year that were independently spent obtaining literature that ended up being relevant to the faculty teaching and/or research objectives was calculated. Result = 155.4 hours.
- The total number of hours/month that were unproductively spent by the College as a whole over the last year was calculated. Result =  $193.9 - 155.4 = 38.5$  hours/month. This equates to approximately 20% of the entire faculty's (as a whole) search time being unproductive. However, this does not imply that all the librarian's literature search efforts are productive, or that all the unproductive faculty search time could be eliminated by utilizing the services of a reference librarian in performing literature searches. It would be interesting to determine the productivity of a reference librarian in performing literature searches as a part of a follow-up investigation.
- Based upon the answers to questions 4 and 5 (Appendix A, Q4: *Approximately what % of the material that the librarian acquired for you through his/her research ended up being actually relevant and useful for the scholarship or classroom activity for which it was intended?*; Q5: *Qualitatively speaking, how useful do you consider the librarian's services to be in support of your research?*), it can be seen that generally the engineering and technology faculty were not in a position to comment upon the benefit of using a reference librarian's assistance because they have not used the librarian's services.
- Based upon the answers to question 6 (Appendix A, Q6: *Would you consider using the librarian's services to perform background searches if the process was automated?*), it can be seen that all the engineering and technology faculty members, without any exceptions, would like to have a system in place where the faculty would be able to utilize the reference librarian's services in order to make their search for literature more efficient. An example of an automated process is an embedded link to a search request web form.

### *Summary of Reference Librarian's Interview*

A detailed discussion with the reference librarian provided us with a review of the different approaches currently available that serve to increase interaction between engineering faculty members and library service providers. An excellent approach that was recommended was the creation of LibGuides for each of the specific engineering and technology areas. A LibGuide is a subject guide on the library website that pulls together all types of information about a particular subject or course of study in one place on the website. Typically, a LibGuide will have tabs to the particular LibGuide home page (Engineering, Information Technology, Electrical Engineering, etc.), related websites, books, journals and databases that the library subscribes to that are relevant to the LibGuide subject. LibGuides are primarily created to support students and courses within the subject area. However, a LibGuide can be created to support a professor's research within a department. Some of the material may overlap with that in the LibGuide that supports students and classes, but would be more relevant to supporting the research activity. For instance, the library subscribed databases relevant to electrical engineering research would be directly listed within the



electrical engineering LibGuide. Journals relevant to electrical engineering would be listed in the Journals tab within the LibGuide, Organization and government websites that support and fund research could be listed in the website tab (e.g., Government Sites for the National Science Foundation and National Institutes of Health funding, etc.). A separate website category might list private agency funding sites that support academic research – American Cancer Society) or point to sites on how to get industrial funding and setup relationships with industrial partners. It would be a portal into doing research in a subject area within the university. Finally, within the LibGuide would be a link to submit a request for support from the librarian or request searches from the reference librarian.

Another approach was to invite the librarian to have face to face meetings with the faculty that could be accommodated during faculty department or college meetings. The format for the interaction could be casual or a formal training session as desired by the individual departments. Additionally, regular email announcements of library services would be recommended.

## **Conclusion**

We acknowledge that this study was conducted on a small sample size, on one College at one small university campus. This was only an initial investigation and we intend to conduct a follow-up investigation with a larger sample size within the Purdue University system.

Based upon our survey and the subsequent analysis, we concluded that the majority of faculty members in the College of Engineering and Technology at Purdue University North Central make little to no use of the on-campus reference librarian's services to search for supporting literature pertaining to their classroom teaching and academic research activities. It was concluded that 2.8% of the total amount of time spent by the College as a whole involved the use of the services of the library to perform academic literature search work.

Additionally, it was concluded that out of the 97.2% of the total time spent by the College as a whole on obtaining supporting literature, only 80% of this material was relevant to their classroom teaching or research objectives. Therefore, 20% of the college's time was spent unproductively.

Established research discussed in the literature review section states that reference librarians are very beneficial, even though this is the digital age. Their services are very useful while looking for literature and they provide the user with a sense of comfort and confidence in the credibility of the sources found during the literature search. Considering that this study concludes that about 20% of the Engineering and Technology College faculty's time was spent unproductively while making literature searches, and that they availed themselves of the reference librarian's services to a negligible extent, it would be useful for faculty to make more use of the reference librarian's services while performing literature searches.

Additionally, established research by Baddyopadhyay and Boyd-Byrnes<sup>8</sup> discussed in the literature review also states that face-to-face interactions with reference librarians are beneficial. This is in alignment with the finding from this study which concluded that the majority of engineering and technology faculty do not make significant use of the librarians' services, and about 20% of their time was spent unproductively as mentioned above. It is inspiring to note that

all engineering and technology faculty surveyed unanimously were open to using the reference librarian's services via an automated process. In this context, it would be useful to emphasize the importance of face-to-face consultations with the reference librarian, in addition to an automated process. This approach was also highlighted by the reference librarian and was stated earlier in the section titled "*Summary of Reference Librarian's Interview*".

The results above call for the creation of a process and system by which the College can more effectively utilize the librarian's services would save the College faculty precious time which can be utilized more effectively for other academic purposes such as improving lectures, grading, service activities on campus, research, and interaction with students. We can confidently state that all the College of Engineering and Technology's faculty would like to have a system established that would facilitate the efficient acquisition of literature relevant to their teaching activities and research work by using the reference librarian. It would be valuable to conduct further research to gain more insight into faculty members' perspectives.

We propose the following items be implemented to improve interaction with the university's reference librarian:

- 1) An enhanced outreach process by the library to the College's faculty. It is proposed that this outreach process consist of the publication of available resources via an email which includes an embedded link to a search request web form that is sent periodically by library staff to encourage, simplify and improve the mechanisms to interact with library staff. The goal is to make engagement with the reference librarian easier and more specifically to encourage and make search requests easy to submit. Additionally, it would be beneficial to organize a meeting at the start of each year in which the reference librarian personally engages with the faculty and informs them of the library resources that they can use. This meeting could assist in developing a personal connection between the reference librarian and faculty members and thereby motivate them to use the process described in the next item.
- 2) Implementation of an on-line web form for the submission of search requests to the reference librarian. The current method of electronically requesting services from the PNC library consists of a general web-based form with one area for typing in a description of what the faculty member is requesting. We concluded that the library's outreach process could be improved by making it easier to submit a search request specifically. The web-based form we recommend includes: a) a level of priority associated with the request, b) an optional requested due date, c) identification of the department in which the faculty is a member, d) the subject area, e) keywords, f) any specific databases to be searched (optional), g) any special comments, and h) an option requesting an appointment with the librarian.
- 3) The creation of a short-cut on each faculty member's desktop that points to the on-line web form for requesting a search. This short-cut on the desktop will eliminate the need for busy faculty to search for the form on the university website and make it easier and encourage faculty to submit search requests to the university librarians.
- 4) The creation of LibGuides for specific engineering and technology research areas.

Recommendations for future research are: a) a follow-up survey utilizing a larger sample size within the Purdue University system, b) a follow-up study to determine how effective the reference librarian's services were when the proposed process and system described above have been implemented, c) implementation of the new search request web form and desktop short-cut to the form, d) exploration of the faculty perspective holistically to encourage changes in behavior and perceptions. For example, question 6 in the survey could be expanded as follows: What are the fundamental barriers to the current library system? What is the faculty level of satisfaction with their current process? What are their beliefs about their skill level and research time? What were faculty's reasons for answering in the negative to question 6? e) to interview those faculty who used the services to find out more about their experiences, and f) to determine the productivity of a reference librarian in performing literature searches.

## References

1. Kumar, B. T. S. & G. T. Kumar. 2010. Perception and usage of e-resources and the internet by Indian academics. *The Electronic Library* 28 (1): 137-156.
2. Brophy, J & D. Bawden. 2005. Is Google enough? Comparison of an internet search engine with academic library resources. *ASLIB Proceedings* 57 (6): 498-512.
3. Williams, P., D. Nicholas & I. Rowlands. 2010. E-Journal Usage and Impact in Scholarly Research: A Review of the Literature. *New Review of Academic Librarianship* 16 (2): 192-207.
4. Maughan, P. D. 1999. Library resources and Services: a Cross-disciplinary Survey of Faculty and Graduate Student Use and Satisfaction. *The Journal of Academic Librarianship* 25 (5): 354-366.
5. Holland, M. P., T.E. Pinelli, R. O. Barclay & J. M. Kennedy. 1991. Engineers as Information Processors: a Survey of US Aerospace Engineering Faculty and Students. *European Journal of Engineering Education* 16 (4): 317-336.
6. Magi, T. J., & Mardeusz, P. E. (2013). Why some students continue to value individual, face-to-face research consultations in a technology-rich world. *College & Research Libraries*, 74(6), 605-618.
7. Fournier, K., & Sikora, L. (2015). Individualized Research Consultations in Academic Libraries: A Scoping Review of Practice and Evaluation Methods. *Evidence Based Library and Information Practice*, 10(4), 247-267.
8. Bandyopadhyay, A., & Boyd-Byrnes, M. K. (2016). Is the Need for Mediated Reference Service in Academic Libraries Fading away in the Digital Environment? *Reference Services Review*, 44(4).

## APPENDIX A

### Questionnaire

#### Library Resource Usage in PNC College of Engineering

1) Over the last year, approximately how many hours did you spend on background research? (i.e., background searching to acquire data that would be used for either scholarship activity or classroom teaching)

\_\_\_\_\_ hours/month spent searching for info / papers to support research or teaching

2) Of the total time entered in Question 1, approximately what was the breakup between the percent of time you independently acquired this material (i.e., independently conducted internet searches, physically went to the library and looked for material yourself using library resources / databases), and the percent of time you indirectly acquired the material by using a librarian (i.e., search done by a reference librarian by providing him/her with keywords relevant to your search) ?

\_\_\_\_\_ % of time spent independently searching

\_\_\_\_\_ % of time where librarian performed search

3) Approximately what % of the material that you independently acquired for yourself

via your searches ended up being actually relevant and useful for the scholarship or classroom activity for which it was intended?

\_\_\_\_\_ % of material independently searched that was relevant to your research (or N/A)

4) Approximately what % of the material that the librarian acquired for you through his/her research ended up being actually relevant and useful for the scholarship or classroom activity for which it was intended?

\_\_\_\_\_ % of material searched by librarian that was relevant to your research (or N/A)

5) Qualitatively speaking, how useful do you consider the librarian's services to be in support of your research?

\_\_\_\_\_ 4 (Very Useful)

\_\_\_\_\_ 3

\_\_\_\_\_ 2

\_\_\_\_\_ 1

\_\_\_\_\_ 0 (Not Useful at All)

6) Would you consider using the librarian's services to perform background searches if the process was automated?

(i.e., can simply submit an electronic form with your request)

\_\_\_\_\_ Yes

\_\_\_\_\_ No