

USER SATISFACTION IN ACCESSING MULTIPLE BIBLIOGRAPHIC DATA
BASES. (SATISFACTION DE L'USAGER DANS SON UTILISATION DES
BANQUES DE DONNEES BIBLIOGRAPHIQUES MULTIPLE.)

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ABSTRACT

The Departmental Library of the Department of National Health and Welfare in Ottawa has been offering an on-line literature search service for a period of about two years. Nineteen data bases, which cover a wide spectrum of subjects, are available to the Library for access. An average of one hundred searches a month are carried out. Advantages and disadvantages of accessing multiple data bases are discussed. Some solutions are proposed for problems which occur in an information centre offering this type of service. Recommendations for the alleviation of difficulties experienced by search editors are made to the suppliers of on-line bibliographic data bases. Great interest has been taken in the user-searcher interface. A variety of techniques are described for the evaluation of user satisfaction. (La bibliothèque du ministère de la Santé nationale et du Bien-être social à Ottawa offre depuis environ deux ans un service de recherches de documentation en liaison directe avec l'ordinateur. La bibliothèque a accès à dix-neuf banques de données qui couvrent un large éventail de sujets. On effectue en moyenne cent recherches par mois. On discute des avantages et des inconvénients d'accéder à des banques de données multiples. On propose des solutions aux problèmes qui surviennent dans les centres de renseignements offrant ce genre de service. On présente des recommandations aux fournisseurs des banques de données bibliographiques en liaison directe avec l'ordinateur dans le but d'alléger les difficultés qu'éprouvent les chercheurs. On s'intéresse beaucoup à l'association usager-chercheur. Diverses techniques sont décrites pour évaluer la satisfaction de l'utilisateur.)

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PROPOSITIONS

1. Greater satisfaction can be given to users by accessing multiple data bases when searching on interdisciplinary subjects and when comprehensiveness of the coverage of journal literature is required.
2. Stated relevance as the only measurement does not give a complete assessment of user satisfaction.
3. An on-line literature search service can be efficient and effective to the users' satisfaction without the users being present during searching.

INTRODUCTION

The Departmental Library of the Department of National Health and Welfare in Ottawa has been offering an on-line literature search service for a period of about two years using a Texas Instruments Silent 700 terminal. CAN/OLE, Medline, Toxline, Dialog and Informatics software packages have been accessed allowing use of twenty-one data bases on subjects varying from clinical medicine to social welfare. During 1975, 304 literature search requests were received from 196 users from locations across Canada generating 964 on-line searches.

Fig. 1 - Data Bases Searched

Data base accessed	% of total use
ABI/INFORM	1.2
BA Previews	4.9
CAIN	3.0
Cancerline	0.3
Chemical Abstracts Condensates	11.4
CHEMline	6.5
Compendex	1.5
ERIC	0.4
Excerpta medica	2.3
Inspec	0.5
Medline	43.0
NTIS	10.6
Oceanic abstracts	0.1
Psychological abstracts	0.9
Scisearch	0.3
SSCI	6.6
Toxline	16.3

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The clientele is made up of research scientists and those members of the Department involved in policy making and research planning. During the four year period 1969-1973, 441 manual searches were prepared whereas 304 were completed in one year. Except for urgent requests, which are processed immediately, turn-around time is usually about two weeks from date of receipt to availability of print-out.

Requests for literature searches are made in person, by telephone or by filling in a form (see Appendix A) and sending it to the Library by mail. The search editor usually follows up the request by contact with the user but this depends on the nature of the request and the amount of information the user has already supplied. The search editor prepares strategy prior to going on-line and then sends the citations retrieved in the print-out to the user. Only one user has ever requested to access the data bases directly and three others have specifically requested that they be present during the on-line search.

PROBLEMS OF ACCESSING MULTIPLE DATA BASES

Accessing multiple bibliographic data bases in a great variety of subjects with a small staff presents several problems. There are many variables to consider. Not only has there to be a knowledge of each data base - its special characteristics, its access points, its organization etc. - but also suppliers have developed their own software packages which must also be mastered. In addition, some data bases are available from more than one supplier so that decisions must be made as to which system should be used. Literature search requests are usually on a very specific subject thus requiring the search editor to, at the very least, have some knowledge of the terminology of that subject in order to carry out a meaningful search.

As the reference staff is experienced in answering reference questions involving the use of our total collection, it was decided that one staff member, a senior librarian, would be made responsible for the on-line information retrieval activities of the Library. The remaining of the professional and technical reference staff would be given the responsibility of keeping up-to-date on changes in specific systems accessed. This allowed the most experienced search editor to search the more difficult systems, to train a team and, therefore, develop a good searching capability on the various data bases.

When a literature search request is received, a decision must be made as to whether it should be handled manually or on-line or a combination of both. Availability of hard copy, comprehensiveness of the search requested, subject matter, form in which requested material would appear such as monographs, conference proceedings, journals etc. and when the results of the search are required must all be considered.

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If the search is to be performed on-line, decisions are made as to which data base should be used and the request is assigned to a staff member. Search strategy is discussed before going on-line.

The experience of accessing multiple systems has caused several problems to manifest themselves. The lack of standardization and a fairly high frequency of change in the searching features of the data systems have had a measurable impact on the quality of the search results. Of major concern is the area of communication and education. For a searcher who uses one or two systems regularly, the on-line news service is valuable and quick. However, in a situation in which our organization exists, often the information transmitted via this method is not received. There is great need for a regular newsletter covering information regarding such items as change in telephone numbers, corrections of inaccuracies in the manual, etc. The educational aspect is also important. The manuals produced by the supplier should be up-to-date, and easy to use from the point of view of quick reference as well as a training tool. There is no doubt that manuals, on the whole, can be greatly improved to enhance their value in these areas.

When a supplier adds a new data base to the system, manuals should be available immediately and not some months later. The intent of the new manual from the American Psychological Association to "primarily serve the needs of the intermediary personnel who search the Psychological Abstracts on-line data base" should be the objective of all manuals. The editor of this manual encourages communication from those who are going to use it and gives assurance that there will be a second edition. When manuals contain inaccuracies or are not up-to-date, costs rise quickly when the intermediary is in the act of searching on-line. It is recommended that a list of periodicals, which are indexed completely, and a list of those indexed selectively, should be provided for each data base. Examples of actual searches are particularly helpful in a manual and a trend appears to be developing to include this feature in the newer manuals. In general, "hot lines" have been most helpful and one supplier offers the extra facility of sending messages on-line to which a reply is received promptly.

EVALUATION OF USER SATISFACTION

In order to evaluate user satisfaction with the on-line literature search service provided by the Departmental Library, several aspects of the service were analyzed and the following propositions are presented.

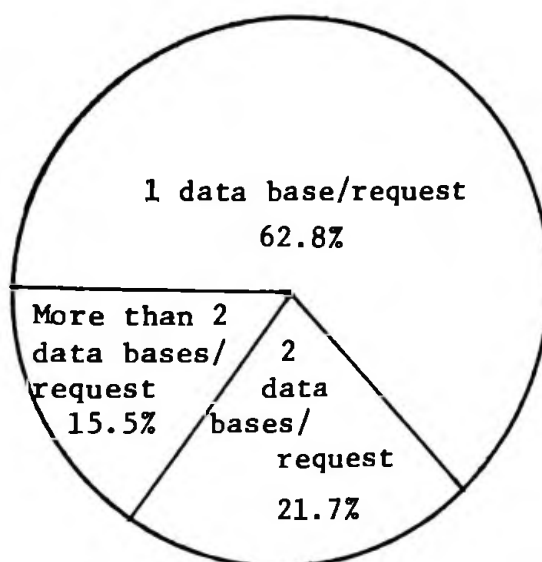
Proposition 1. Greater satisfaction can be given to users by accessing multiple data bases when searching on interdisciplinary subjects and when comprehensiveness in the coverage of journal literature is required.

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It was calculated that 37.2% of the literature search requests received were filled by searching on more than one data base.

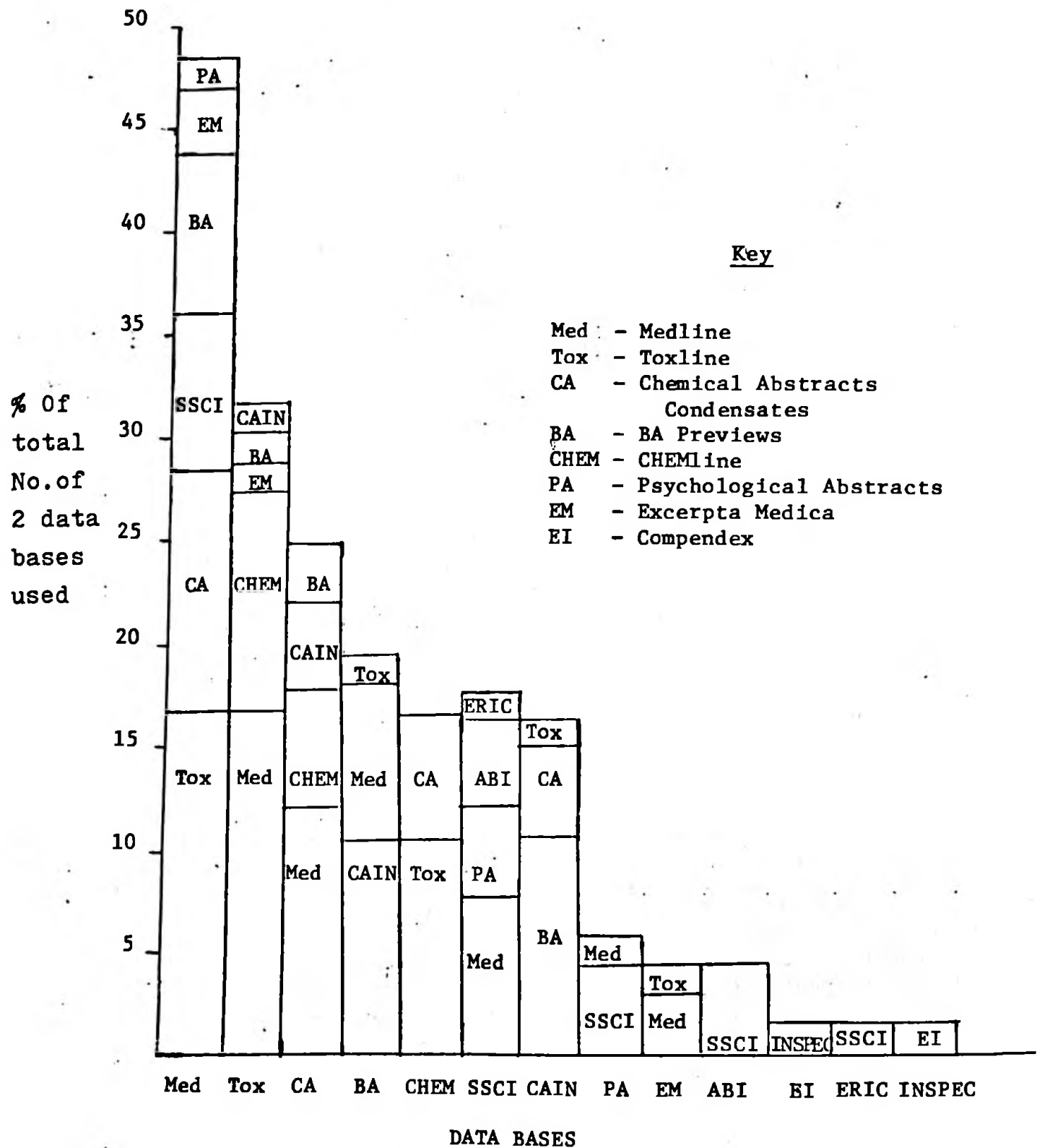
Fig. 2

Number of data bases used per literature search request



It was noted that often the same data base was accessed more than once in order to satisfy a request. In 53% of the time this was due to systems problems such as noise and cut-offs which require logging on later in the day. 47% of the duplicate access was because of searching problems such as covering different aspects of the subject being searched, dissatisfaction with the first results, printing off-line after consultation with the user and with requests requiring searches which would be too large to handle in one on-line search, for example a search on the analysis of thirty drugs would generate three searches on one data base.

Fig. 3 - Combinations of two data bases used



Excerpta Medica data base was only available for 3 months in 1975.

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The combinations used most often can be seen from Figure 3. Medline and Chemical Abstracts Condensates are used for searches requiring comprehensive coverage of analysis, stability and manufacture of drugs. In this way, both the biological and chemical analyses are well covered. When Medline and Toxline are used in combination it is almost exclusively for searches on drug, metal or compound toxicity with Medline being used as a backup for currency and comprehensiveness as Toxline was behind in updating during much of 1975. Medline and SSCI were used for searches requiring complete coverage on the social aspects of health and Medline or Toxline and BA Previews for searches on health effects of various substances on animals. When there are very few references expected in response to a search or European information is required the Excerpta medica data base is used in combination with Medline or Toxline.

CHEMline does not represent another aspect of a search but it is valuable as it gives the Chemical Registry numbers and synonyms for drugs or compounds. One of the values of Toxline is that in three of the six data bases which are accessible, searches can be carried out using Chemical Registry numbers. It would be most helpful if one could search Chemical Abstracts Condensates by Chemical Registry Number. Searches on the subject of management have been handled on ABI and SSCI. BA Previews and CAIN were used for the microbiological analysis and contamination of food. This combination has now largely been abandoned in favour of a manual search in Food Science and Technology Abstracts as users have indicated that this abstracting service covers their needs better than the data bases available on-line.

There are three main reasons for the use of more than two data bases. If information on the requested subject is difficult to find either because it is new or if the user wants anything that can be found, all potentially appropriate data bases are used. Conversely, if the user requires a comprehensive search because he is starting a research project or doing a review of the literature for publication, more than two data bases are often used. Thirdly, inter-disciplinary subjects such as health effects of environmental factors, for example, noise, quality of air in buildings and the use of toxic compounds in manufactured goods, require searching on multiple data bases.

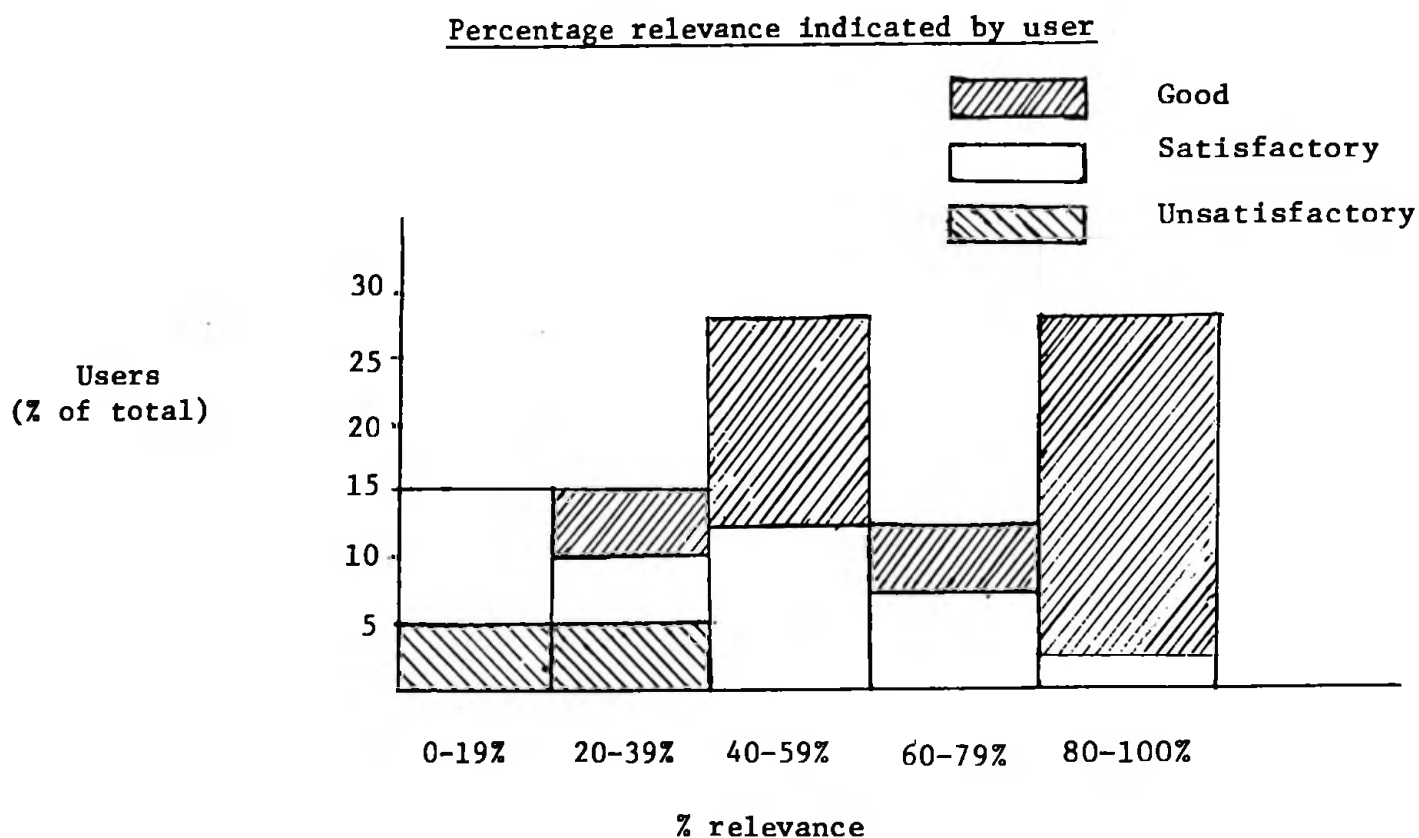
27.5% of those who filled in our evaluation form (see Appendix B) received print-outs using multiple data bases. Of those, 54.5% rated the search "good," 36.4% "satisfactory" and 9.1% "unsatisfactory." Relevance stated varied from 0% to 95% and the requests were made utilizing all five methods mentioned in Fig. 6.

There was a high degree of user satisfaction when multiple data bases were searched in spite of the large variance in percentage of relevance and the number of ways of initiating the literature search requests.

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Proposition 2. Stated relevance as the only measurement does not give a complete assessment of user satisfaction.

Fig. 4



It was interesting to note that a wide range of relevance satisfied users. Those users who rated the search good were satisfied with between 20% and 100% relevance. Others termed searches of from 0% to 80% relevance as satisfactory whereas searches were rated as unsatisfactory with from 12% to 25% relevance. This would indicate that the measurement of relevance alone has little relationship to user satisfaction. The specific information requirements of the user, such as whether any references were expected to be found or the expected comprehensiveness of the search take on added importance.

In ten cases references were missing that had been expected to be retrieved and in almost all of these cases very recent references were mentioned. This is probably an indication that users are comparing the on-line literature search service with the services provided by Current contents and SDI services and are expecting a greater degree of currency in retrieval.

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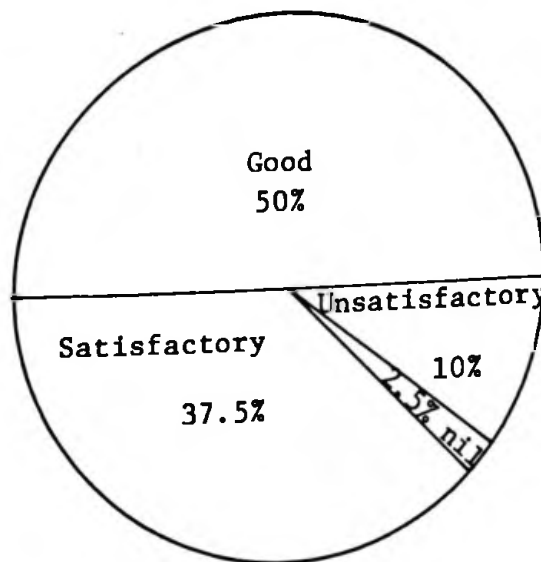
Proposition 3. An on-line literature search service can be efficient and effective to the users' satisfaction without the users being present during searching.

As stated earlier, the on-line literature search service is offered to users in the Department of National Health and Welfare who are situated in many locations in Ottawa and across Canada and who, therefore, cannot always be present during searching. Of the 196 users, 38.8% requested more than one search and, of these, 34.2% requested more than two searches.

In order to evaluate the service, late in 1975, a user evaluation form (see Appendix B) was sent to sixty-one requesters with the results of their search. Unfortunately, the time frame was short and hence the sample is smaller than had originally been planned. The Library received replies to 50.8% of the forms which were distributed.

Fig. 5

User evaluation of search results

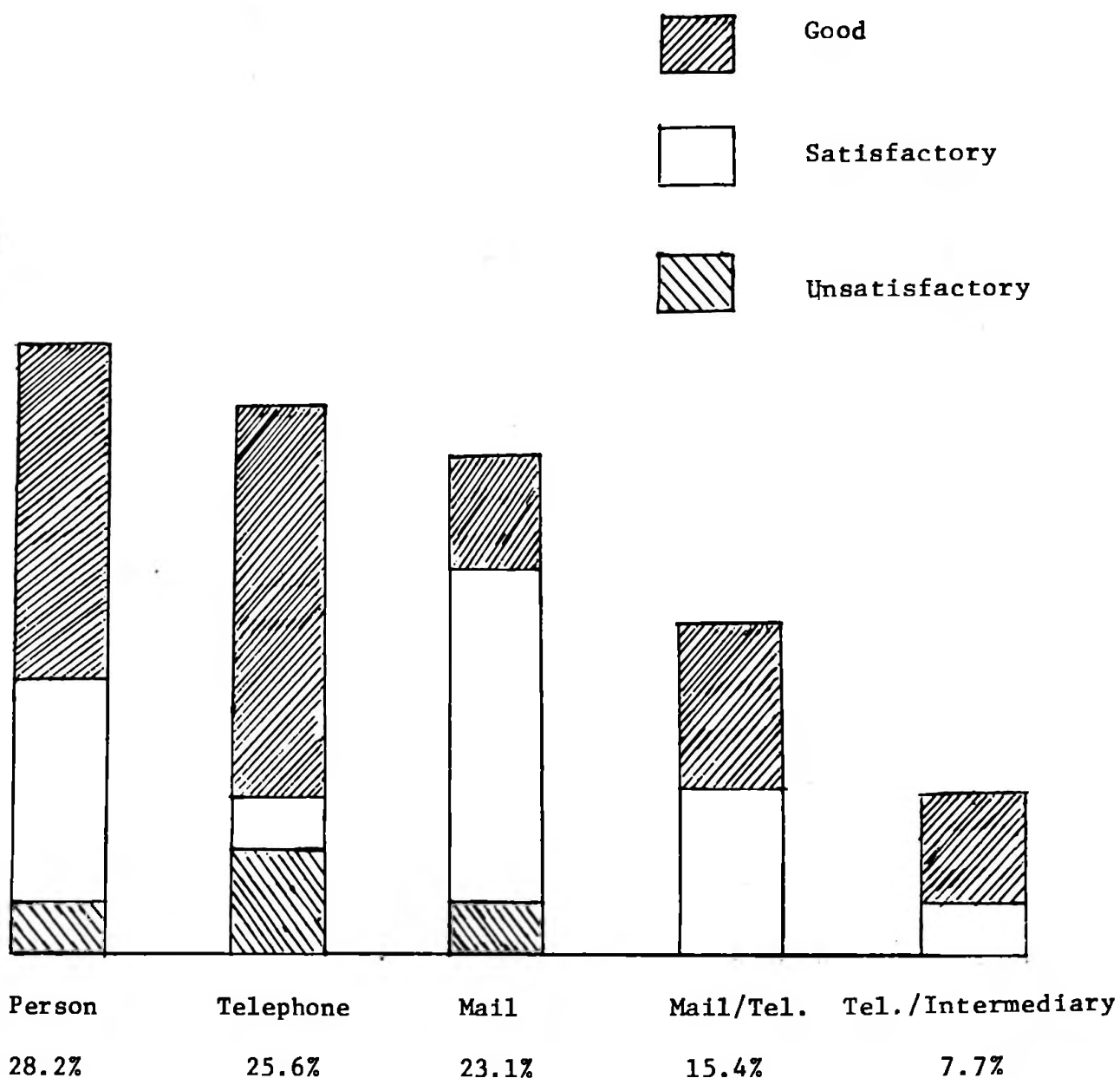


According to these figures, 87.5% of the sample were satisfied with their literature search and one user did not indicate his satisfaction with the search results.

Literature search requests were received by the Library in five different ways and a correlation of user satisfaction to the method of requesting the search was made.

Fig. 6

Correlation of user satisfaction to method of requesting search



HOW REQUEST MADE

From the above table, it would appear that users who requested their searches using the telephone or having an intermediary e.g. a library technician in a Branch Reading Centre, telephone a search request to the search editor were the most satisfied with the search results. The natural expectation would be that users who made their requests in person would be more satisfied due to higher quality of user-searcher interface but the results

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do not bear this out. One explanation may be that users making their requests in person often choose this method because they anticipate that the search will be a difficult one. Those making their requests by mail may feel that their subject is well-defined and will, therefore, be easy to search.

CONCLUSION

Based on the analysis of the on-line literature search service offered by the Departmental Library Services it can be seen that the service has been effective and efficient to the satisfaction of users who, not only, are in many locations, but also, often request searches requiring the use of more than one data base.

REFERENCES

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Health and Welfare Canada
Departmental Library Services

APPENDIX A
Santé et Bien-être social Canada
Services de bibliothèque du ministère

LITERATURE SEARCH REQUEST
DEMANDE DE DOCUMENTATION

REQUESTER - DEMANDÉ PAR	DIVISION	TELEPHONE - TÉLÉPHONE
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NARRATIVE STATEMENT OF REQUEST - EXPOSÉ DE LA DEMANDE

KEY WORDS & SYNONYMS - MOTS CLEFS ET SYNONYMES

PARAMETERS PARAMÈTRES	TIME - TEMPS	LANGUAGE - LANGUE	GEOGRAPHICAL - LIEU
	EXCLUSIONS		
	OTHERS - AUTRES		
SCOPE VUE D'ENSEMBLE	☐ SELECTIVE - some important, highly relevant citations SÉLECTIVES - quelques citations importantes et très pertinentes ☐ COMPREHENSIVE - would include some peripheral citations VASTE - comprendrait certaines citations d'ordre plus général		MAXIMUM NUMBER OF CITATIONS WANTED NOMBRE MAXIMUM DE CITATIONS DEMANDÉES

RELEVANT REFERENCES - RÉFÉRENCES PRÉCISES

AUTHORIZED BY: AUTORISÉ PAR:	DATE REQUESTED DATE DE LA DEMANDE	DATE REQUIRED DEMANDÉ POUR LE
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Departmental Library Services

Requester/Demandeur _____

Subject of Search/Sujet de recherche _____

Address/Adresse _____

Phone/Téléphone _____

On-line literature searching is a comparatively new service offered by the Public Services Section of the Departmental Library. Therefore, feedback from the users of this service would be most helpful for the purpose of evaluation. It would be appreciated if you would answer the following short questionnaire and return it to:

Reference/SDI Unit
Departmental Library Services
3rd Floor
Brooke Claxton Building

Please give a rough estimate of the percentage of references you found relevant in this search:

_____ %

Are there references missing in the search results which you had expected to be retrieved?

Yes _____ No _____

If yes, please specify:

Would you term the results of this search:

Good _____
Satisfactory _____
Unsatisfactory _____

Comments:

La recherche de documents par moyen de systèmes automatisés en liaison directe avec l'ordinateur est un service offert depuis peu de temps par la Section des services au public de la bibliothèque du Ministère. Les commentaires des personnes qui font usage de ce service seraient très utiles pour fins d'évaluation. Nous vous serions alors reconnaissants de bien vouloir répondre au bref questionnaire qui suit et de le renvoyer à:

Référence - D.S.I.
Services de la bibliothèque du Ministère
3^e étage
Immeuble Brooke Claxton

1. Veuillez indiquer le pourcentage approximatif de références pertinentes dans cette recherche:

_____ %

2. Y a-t-il des références auxquelles vous vous attendiez et qui ne figurent pas dans la bibliographie que nous vous soumettons?

Oui _____ Non _____

Dans l'affirmative, veuillez préciser:

3. Selon vous, les résultats de cette recherche sont-ils:

Bons _____
Satisfaisants _____
Peu satisfaisants _____

4. Remarques: