AN EVALUATION OF THE USE OF SUBJECT BASED INFORMATION GATEWAYS: CASE STUDY ADAM

Maria Monopoli and David Nicholas

Department of Information Science, City University, London

ABSTRACT

Nowadays, end-users have quick and direct access to a massive amount of information available on the net. However, this information is unorganised expecting users to be able to identify and evaluate it in accordance with their information needs. Subject Based Information Gateways (SBIGs), organised collections of networked information, provide users with a catalogue of authoritative Internet resources, which can be searched or/and browsed. This paper provides an evaluation of one such gateway - the Art, Design, Architecture & Media Gateway (ADAM). It provides information on who these digital users are, how often they use the service, what their reasons for use are, which search methods and services provided they prefer, and what are the advantages and/or disadvantages of an online information service.

KEYWORDS

online information retrieval, Evaluation, User studies, Art, Design, Architecture and Media Information Gateway, Internet, Gateways, Resource Discovery Network, ADAM - UK

1. INTRODUCTION

In the traditional information environment human intermediaries, such as librarians and publishers, find, analyse and evaluate information so that end-users are able to search organised collections of knowledge. Nowadays, end-users - primarily because of the Internet - have quick and direct access to vast amounts of information. This information varies into its formats, so that people are able to have a variety of data, including sounds, texts, and videos. Users are also expected to be in the position to identify and mainly evaluate this information in order to satisfy their information needs. However, they do not always have the time or skill to search the Internet for information that could support their work. Therefore, the big question is 'How it would be possible to organise the massive amount of information available on the net?' One possible solution is the Subject Based Information Gateways (SBIGs). 'Subject gateways work on the same principle - they employ subject experts and information professionals to select, classify and catalogue Internet resources to aid search and retrieval for the users. Users are offered access to a database of Internet resource descriptions, which they can search by keyword or browse by subject area. They can do this in the knowledge that they are looking at a quality-controlled collection of resources'(1).

An example of Subject Based Information Gateways, is the Art, Design, Architecture, and Media Information Gateway (ADAM) (2). It aims to help people to find Internet based information resources in subject areas related to art and design including fine and applied arts, architecture, media, and museum studies and conservation. End-users are able to search the ADAM catalogue in a variety of search or browse strategies using simple to advanced techniques. Training and support are provided in order people to use the service in its full potential. The records in the catalogue are created by a team of professional librarians, who locate resources according to the ADAM Collections Policy (3), evaluate the quality of resources against the ADAM Selection Guidelines (4) and then use the traditional librarianship skills, such as cataloguing and classification to create a detailed description of any Internet resource.

2. AIMS AND OBJECTIVES

This article provides the results of an evaluation of the use of the ADAM gateway. The evaluation was conducted on behalf of the Surrey Institute of Art and Design based in Surrey, which also hosts ADAM. Traditionally, use of an information system or service, such as a library has been measured in various ways, including calculating the number of visits to the library. Then, the record of the number of users has been an indicator of the success or failure of a library; the greater the number of end-users the greater the success of the library. In a similar way, the success or otherwise of an online information system can be measured by the number of end-users having accessed it. However, a study totally based on quantitative analysis presenting numbers on the use of online resources would not provide an in-depth analysis. Thus, this article examines the use of online information resources not only by measuring the number of users with their identity concerning their age, gender, and occupation, but also by providing some answers to the following question: How do academic staff, research staff, and students use the ADAM service for obtaining information?

Inevitably, end-users are invited to indicate their assessment on a number of issues including reasons and frequency of use, search methods and services provided by ADAM preferred, and the advantages and/or disadvantages of ADAM over a traditional library. Our decision to focus on academic and research staff and students was taken firstly because we were interested in describing the use of online information resources by Higher Education and secondly because they represent more than one-third of total users. Information on the ADAM use by HE is incorporated in the 'ADAM Use' section.

All this information concerning the ADAM use is valuable data for the designers of electronic, digital, or virtual libraries, where users deal with online information resources. The notion is not merely 'to get users to agree' with an online information system but to create a service which is usable and friendly; where end-users have been involved in its creation by expressing their opinion and concern into the design process (5). Satisfaction of user needs is the ultimate, and only, justification for the existence of any information service (6).

3. LITERATURE REVIEW

A comprehensive scan of the literature discloses that there has been very little published on the use of online subject gateways. Yet there has been an increase in their number -and popularity- during the last five years focusing on different subject areas, such as social sciences or art and design (7). Logs analysis of various online gateways can verify this constant increase in use. This together with the fact that online resources have become a major source of information for many people has emphasised the need to know more about what people think about finding information through online gateways on their own.

Results of previous user studies have indicated that although use of online gateways is irregular and light, the concept of providing them with access to quality Internet resources is welcomed (8, 9). A response to this might be the fact that people seem to experience problems in obtaining information from the Internet (10, 11,12). These problems vary from the quality of information on the net and lack of time required searching to technical issues such as how long it takes for a web page to be downloaded. Some comments confirm that end-users require information systems that provide them with quick and direct access to information in a specific subject area:

- 'RUDI is the first comprehensive, detailed informative base concerning urban design that I have found on the net. It is a mine of useful information, especially for those like me who are undertaking extensive research into a university final year project. It would be an awful shame to lose it' (13).
- 'I am very impressed with BUBL's information provided to the Internet community' (14).

Likewise, findings of previous user studies on how they obtain information from online information systems such as electronic journals have indicated that people are well favoured to the general concept of electronic resources (15). Characteristics such as speed of

searching and printing, benefits of simultaneous access, and the fact that users can work from home having 24-hour access to resources are some of the main reasons why users enjoy using electronic resources (16, 17). However, users adopt relatively unsophisticated, simplistic approach to searching, where browse facilities are used more infrequently than search. They tend to use single keywords and rarely use Boolean operators (18, 19, 20, 21). Notwithstanding the low use of advanced searching techniques, such as thesaurus, few people use the online help function, which could support their searches. Though, users evaluate the online help function as a useful guide tool of an information system (22). As a solution to the limited search skills of users, training and support is suggested by a number of surveys (23, 24, 25).

At the same time, end-users have expressed some doubts relating to digital information sources. The slow loading of web pages (26) and accessibility of electronic resources are some indicators of users' concerns. Users want fast and easy access to information without being required to memorise usernames and passwords in order to use an online information system (27, 28). Ideally, users would like to get the full-text of all electronic documents they locate. They do not like searching an electronic resource to find a bibliographic reference and then having to use another source to locate the full text of this item (29).
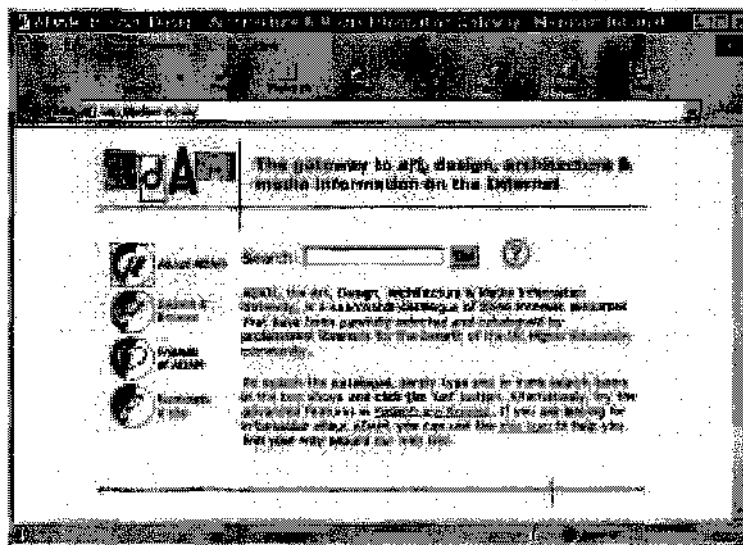
4. ADAM USE

Figure 1: *ADAM Home Page - (http://www.adam.ac.uk)*

Developed in 1996 the ADAM gateway is a JISC funded project. ADAM's home page is presented in Figure 1. Since its inception there has been a rising demand for ADAM's services, although use is plainly seasonal (Figure 2). Peaks coincide with the beginning and end of the university spring and autumn terms. The highest number of accesses per month - 59,098 - was recorded in May 1999. Hourly access to ADAM is presented in Figure 3. Subdomain analysis of daily access to ADAM reveals that during the five-year existence of ADAM the user population has fundamentally changed in character. As might be expected educational subdomains, such as edu and ac.uk, have always represented two of the largest user groups. However, there has been a constant decline in their representation: in 1996, edu and ac.uk accounted for 43% of total subdomain accesses, 58% if we discount the unresolved accesses, while in 1999, edu and ac.uk were 26%, and 32% excluding the unresolved accesses (Figure 4). The reason is that the significance of UK educational establishments is declining. In 1996 ac.uk was 39% of total subdomain accesses and in 1999, it was 22% (Figures 5 and 6).
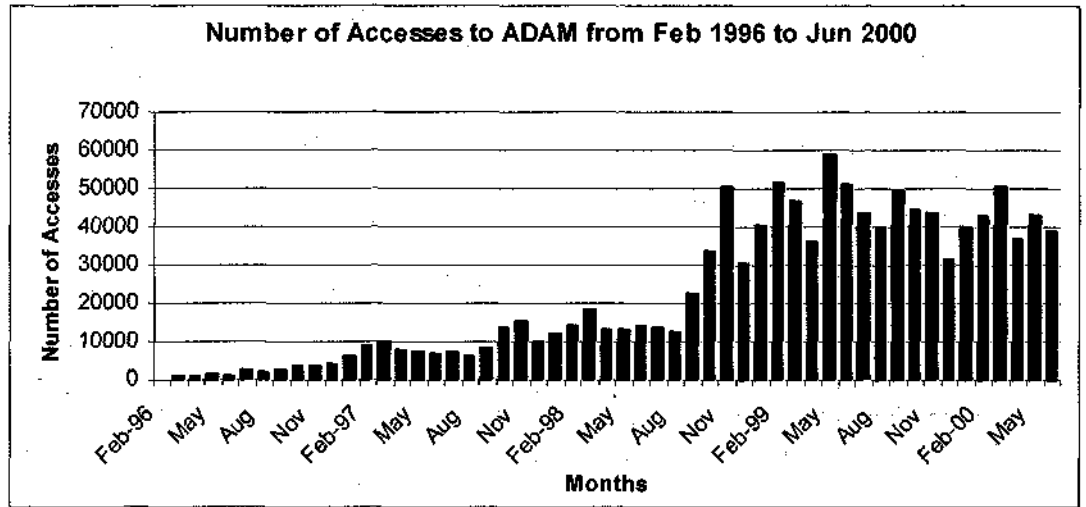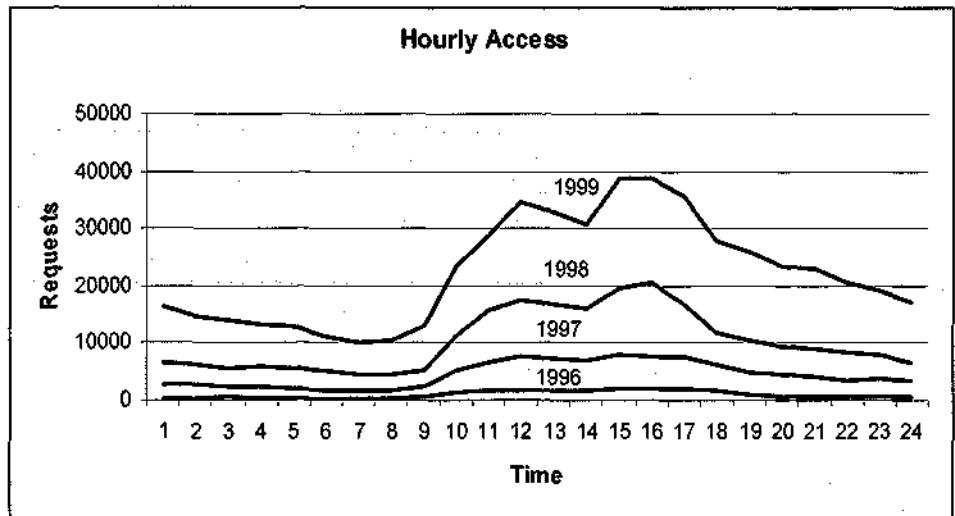
Number of Accesses to ADAM from Feb 1996 to Jun 2000

Figure 2: *Number of Accesses to ADAM from February 1996 to June 2000*

Hourly Access

Figure 3: *Hourly Access to ADAM*

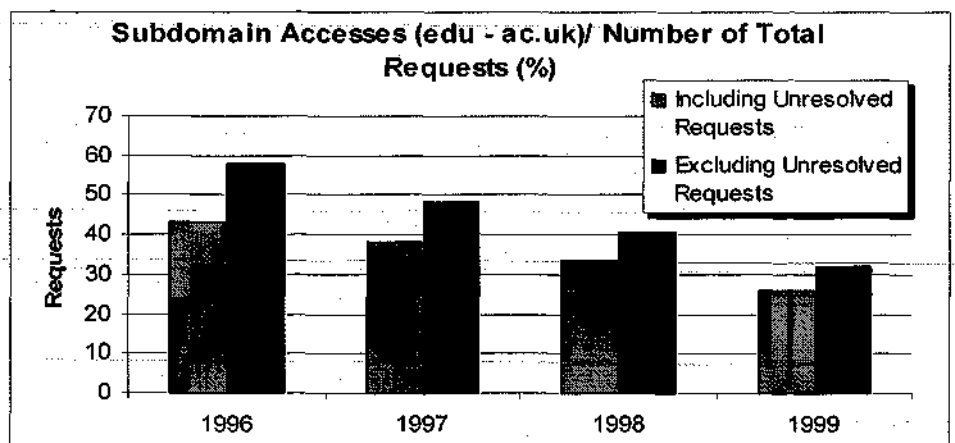**Subdomain Accesses (edu - ac.uk)/ Number of Total Requests (%)**

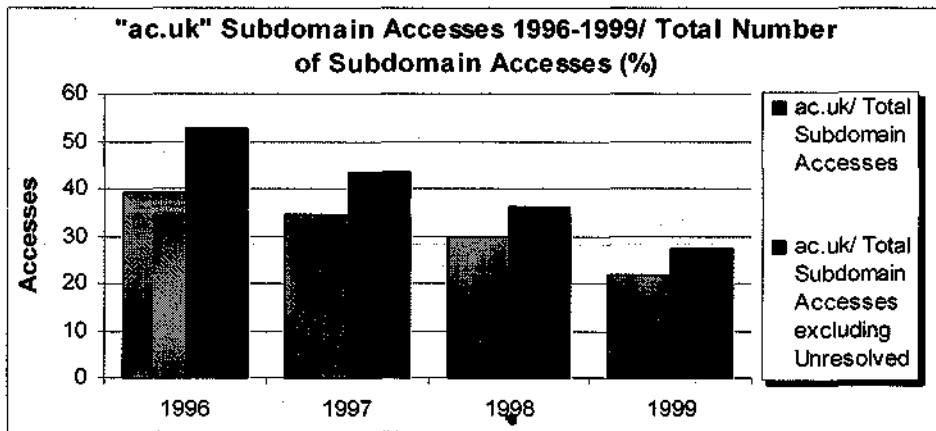Figure 4: *Educational Use of ADAM (1996-1999)*

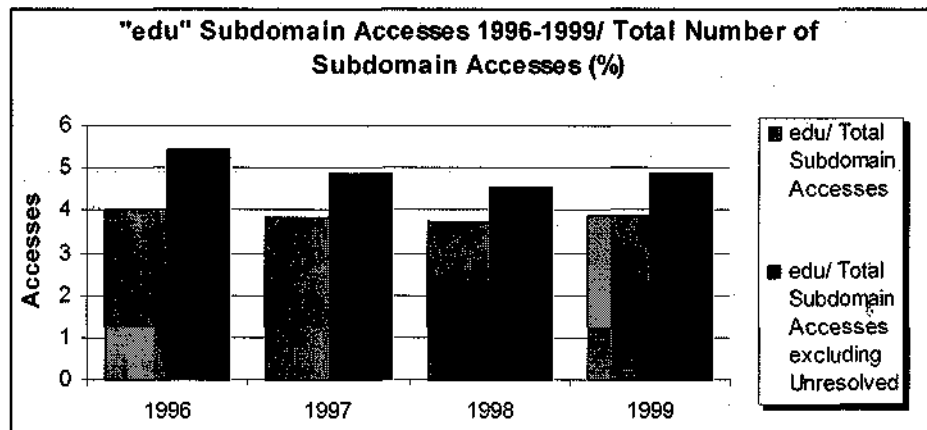Figure 5: *British Educational Use of ADAM (1996-1999)*

Figure 6: *Educational Users of ADAM (1996-1999)*

Web statistics notoriously give a false sense of use (30) and for many people have emphasized the need to obtain feedback based on real end-users. A 1996 survey (31) on the ADAM application was totally focused on users' experience with electronic information. The aim of the survey was to gather information about the likely end-users, their information needs and behavior, in relation to use of existing resources. The survey, which was targeted primarily at UK residents, identified three user groups as the key members of the potential ADAM end-users:

- Teaching and research staff- Students - Librarians
- Museum curators
- Practitioners

The questionnaire, which was distributed in three formats: print, email attachment and online via the WWW was divided into five sections titled: user background, information uses and retrieval processes, future developments, experience and use of computers, and Internet search tools and useful sites, respectively. 710 respondents answered the questionnaire, of whom 30% were academic and research staff, 7% were students, 26% were librarians, 7% museum curators, and 15% were practitioners. There was also the 'other' option, which represented 15% of the respondents. Results indicated that the vast majority of respondents regular Internet users: 36% indicated they used the Internet daily, 16% weekly, 2% monthly, 9% spasmodically, 4% rarely, and 33% either they did not use the Internet or they did not answer this question. Despite high volumes of use, 78% of the respondents encountered difficulty in obtaining information from the Internet. The fact that is difficult to locate material relevant to their needs was the most frequent problem. They also raised doubts concerning the availability of information, speed, cost, and gaining access to

information. Two-thirds of the respondents accessed the Internet at work using their own or shared machine.

Regarding their search methods, 'subject' option was their first choice, while 'author' and 'keyword' options were their second. 41% of the respondents indicated that they used a thesaurus as an aid to information searching. Librarians were the occupation group with the highest percentage of use, while practitioners were the lowest users. 38% of total respondents mentioned that they advised another person to carry out information searches. The group who reported the greatest use of another person for searching were practitioners, with students reporting the lowest use at only 17%.

5. RESEARCH METHODS

As far as methodology is concerned, this study is an evaluation based on users' experience with the ADAM service. It attempts to evaluate ADAM in terms of real searching behaviour obtained by users' feedback. User-oriented evaluation of information systems and services is best served by using a case study methodology (32). An online questionnaire was the main data gathering medium. Given the geographical scatter and large size of the potential user population it was the logical method. The questionnaire that was made available on the ADAM web site for a period of two months, from May 1st until June 30th 2000, was asked only from research staff, academic staff and students to complete it. The survey period coincided with the period of peak use. The questionnaire was divided into two sections; the first section titled 'Personal Questions' was intended to obtain personal information on the users - their age, gender, and occupation. The second part titled 'ADAM Use' was meant to get information on reasons for and frequency of ADAM use, the search methods and services preferred, and users' opinions on various issues, such as the advantages and/or disadvantages of ADAM.

6. ADAM SURVEY

6.1. Characteristics of sample population

Eighty-four ADAM users responded to the survey, of whom 60,7% were female and 39.3% of them male (Figure 7). Regarding respondents' occupation, 53,6% were undergraduate, postgraduate, or research students, 3,6% were research fellows or assistants, and 16,7% were lecturers, senior lecturers, professors, or Head of Departments. (Figure 8). Although the questionnaire invited only the academic community end-users to fill it in, some other groups completed it. The category 'others' includes occupations such as consultants.
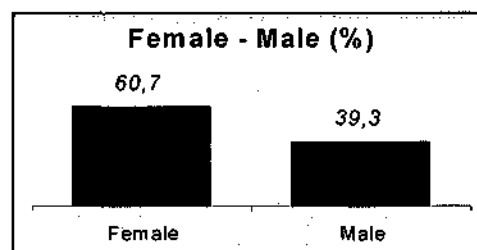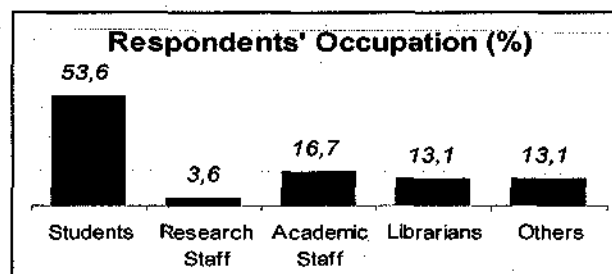
Figure 7: *Gender of Respondents*

Figure 8: *Occupation of Respondents*

ADAM appears to be used by all age ranges, although the majority (61,9%) is under 35 - a not surprising finding given the high proportion of students in the sample (Figure 9).
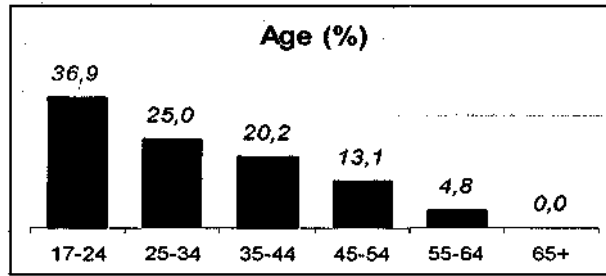

Age (%)

36,9 25,0 20,2 13,1 4,8 0,0

17-24 25-34 35-44 45-54 55-64 65+

Figure 9: *Age of Respondents*

6.2. Frequency of ADAM use

A good deal of ADAM use is irregular and light. 21.5% of the respondents indicated that they accessed ADAM occasionally or hardly ever (Figure 10). Also ADAM appears to attract a lot of new users with well over a third (38,1%) of respondents saying this was their first time. It is not clear whether this represents a large 'churn' rate for the service. If it does it might be a cause for concern and might explain the drop-off in use witnessed earlier. Less than 5% of respondents used the service on a daily basis. These figures are a far cry from those produced by the ADAM market survey that indicated that more than one third of respondents used the Internet daily. The daily users were: a male librarian (45-54) and two male students (17-24 and 25-34). Despite the fact that the survey attracted many more women than men, men said they used the service more frequently than women: 36.4% of them used the service on a daily, weekly or monthly basis. The comparable figure for women was 23.5%). Regarding respondents' occupation, librarians were the most regular users with 90.9% of them using ADAM on a daily, weekly, or monthly basis (Figure 11).
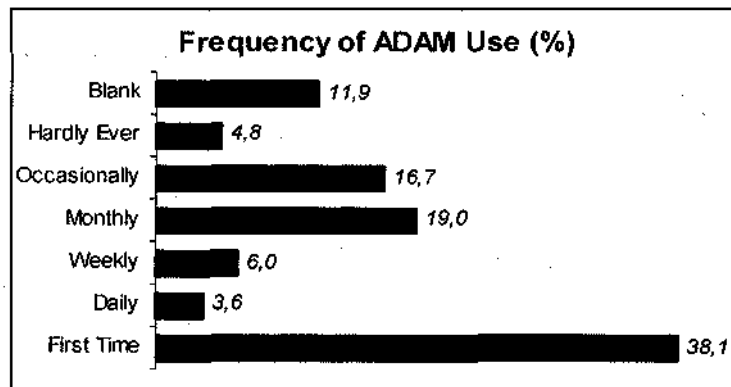

Frequency of ADAM Use (%)

Blank	11,9
Hardly Ever	4,8
Occasionally	16,7
Monthly	19,0
Weekly	6,0
Daily	3,6
First Time	38,1

Figure 10: *Frequency of Use*

ADAM Use by Occupation in a Daily, Weekly or Monthly Basis (%)

22,2 0,0 21,4 90,9 9,1

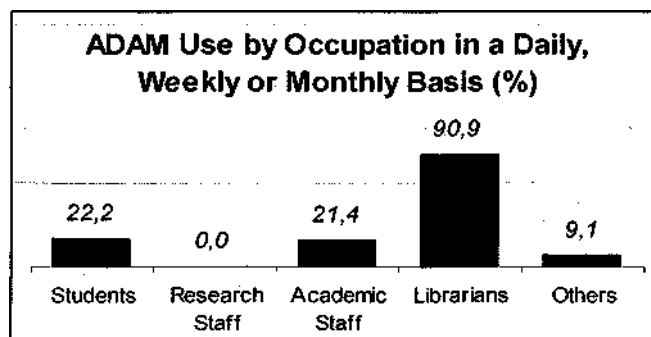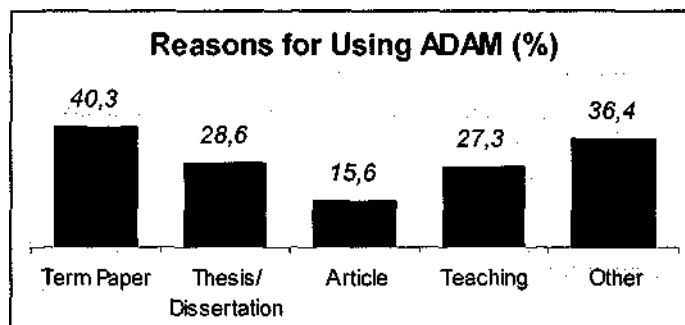Students   Research Staff   Academic Staff   Librarians   Others

Figure 11: *Frequency of Use by Occupation*

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6.3. Reasons for using ADAM

People use ADAM for a variety of reasons. The options provided by the questionnaire were limited because of the nature of target group: writing up a term paper/project or a thesis/dissertation, writing up a paper for publication, e.g., journal article or conference/workshop paper, and supporting a teaching lecture. There was also the 'other' option where respondents could indicate any other reason for using ADAM. 77 users answered this question. 68,9% of them said that writing up a term paper or a thesis was their main reason for using the service, 15,6% used it for writing up a paper, 27,3% for teaching, and 8,4% did not answer this question (Figure 12). Plainly ADAM is used largely in a bibliographic context. The reasons of ADAM use by occupational groups are presented in Table 1. The fact that librarians and Others' occupational groups are included in respondents partly accounts for the high amount of people who specified an another reason for using the ADAM service. Librarians indicated that they used the ADAM for answering queries for their customers, such as students or creating catalogues, for instance compilations of web directories by use of students and staff in institutes of art, design and technology. The Others' occupational group specified either that they searched ADAM for personal interests or for supporting other people work.

(Note: respondents were permitted multiple answers)
Figure 12: *Reasons for Using ADAM*

%	Students	Research Staff	Academic Staff	Librarians	Others
Term Paper	54.5	50.0	33.3	14.3	0.0
Thesis/ Dissertation	34.1	25.0	33.3	14.3	9.1
Article	6.8	0.0	33.3	28.6	27.3
Teaching	18.2	0.0	83.3	28.6	9.1
Other	25.0	25.0	25.0	57.1	81.8

(Note: respondents were permitted multiple answers)
Table 1: *Reasons for Using ADAM by Occupation*

6.4. Place of use

In the survey we attempted to establish the location from where respondents conducted ADAM searches. 38.1% of the respondents gained-aeeess to ADAM from university, 21,4% from home, and 25% both from university and home (Figure 13). There was also the 'other' option where respondents could indicate other places of access. The library and the office where the main other locations given provided by respondents who belong to librarians and 'others' occupational groups, respectively. Proportionally more women access the service from the university - 41.2% compared to 33.3% for men. Regarding occupational groups, students are most likely to search ADAM from the university and the 'others' group is most likely to search the service from home (Table 2).
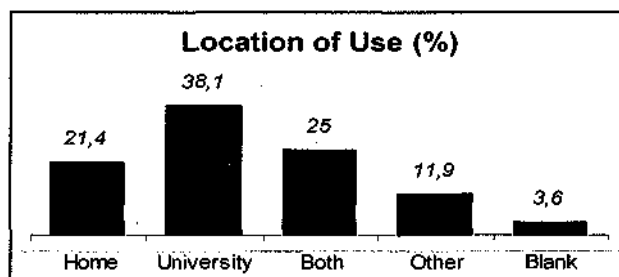
Figure 13: *Location of Use*

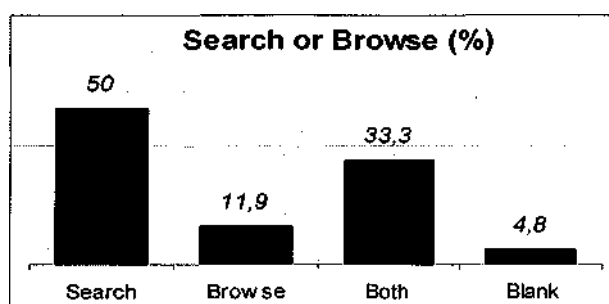| %	Students	Research Staff	Academic Staff	Librarians	Others
Home	20.0	0.0	21.4	9.1	45.5
University	48.9	33.3	21.4	45.5	9.1
Both	26.7	33.3	42.9	18.2	0.0
Other	2.2	33.3	14.3	18.2	36.4
Blank	2.2	0.0	0.0	9.1	9.1

Table 2: *Accessibility by Occupation*

6.5. Evaluation of specific ADAM services

The ADAM service provides its users with a number of services to support their searching including online help, browse and search facilities. Users were asked to indicate which services they have used and specify whether they preferred to browse and/or search. Searching the catalogue is a valuable retrieval method when users know what they are looking for - a specific resource or information on a specific subject area of social sciences. Browsing offers users the chance to find all the available resources under a particular subject area, or relating to a particular geographical region. Online help function aims to provide support to end-users on how to search the ADAM catalogue. Users who have not used the online help function are invited to indicate their reasons for non-use.

6.5.1. Search or Browse

The most popular search method was direct seaching - 50% of respondents preferred this method (Figure 14). If we discount the blank responses this figure rises to 52,5%. 11,9% of respondents preferred to browse: 13,6% if we exclude the blanks. 33,3% of respondents preferred to use both search methods: 38,4% if we exclude the blanks. Women and men showed a similar preference for searching, 49% and 51,5% of them said they preferred searching, respectively. Respondents belonging to the age group 35-44 had the strongest preference for searching (58,8% preferred this method). In contrast aged between 55-64 were the biggest browsers. In addition, users belonged to the age groups 25-34 and 45-54 showed a strong preference on using both search methods, where users aged 25-34 had the highest use (Table 3). Regarding occupation, librarians were the biggest searchers (54,5% preferred this method) and the biggest browsers (18,2% preferred this method). Research staff were the biggest users of both methods (66,7% preferred this method) (Table 4).

Figure 14: *Search or Browse*

%	17-24	25-34	35-44	45-54	55-64
Search	58.1	38.1	58.8	36.4	50.0
Browse	**16.1**	**9.5**	**0.0**	**9.1**	50.0
Both	**16.1**	52.4	41.2	45.5	**0.0**
Blank	**9.7**	0.0	**0.0**	**9.1**	0.0

Table 3: *Search or Browse by Age*

%	Students	Research Staff	Academic Staff	Librarians	Others
Search	51.1	33.3	50.0	54.5	45.5
Browse	13.3	0.0	14.3	**18.2**	**0.0**
Both	28.9	66.7	28.6	27.3	54.5
Blank	**6.7**	**0.0**	**7.1**	**0.0**	0.0

Table 4: *Search or Browse by Occupation*

Users' comments regarding their preference for the direct searching method indicated that it is a simple and quick method of retrieving information providing them more accurate and direct information. Some of their comments on searching were:
- It is a lot more efficient and easier (way) to locate specific information
- Helping students locating specific information

In contrast, browsing method allowed them to do the equivalent of a 'shelf search' and to identify resources in a specific area. They explained:
- (It) enables me to search through related topics (that) I had perhaps not thought of
- (It) can sometimes point you in the right direction

In addition users who had shown a preference on using both search methods, commented:
- Different queries require different access techniques
- Depends what I need to look for
- Sometimes I know exactly what I am looking for (search), and sometimes I don't (browse)

To obtain more details on the searching method employed users were asked to specify which search' or browse strategies provided by ADAM they used. Users are able to choose among five search strategies and three browse strategies. The search strategies provided are:

the simple search;
the option search (where users can search within specific fields, such as title or keywords);
the advanced search (where users can search for combinations of search terms or part of terms);
the proximity search (where users can specify how close their terms must be to each other);
the what's new search (where users can view the records in order of date added to the database, with the most recently added displayed first).

The browse strategies provided are:
the ADAM browser(where users can browse the database by subject headings);
the multi option browser (where users can browse the database by any combination of the following: historical period, resource type, subject headings and the Art and Architecture Thesaurus);
the place name browser (where users can browse the database by geographical area, based on the Thesaurus of Geographic Names).

While all the search and browse strategies have their adherents there are plainly some favourites. 81 people answered this question. The search strategy most favoured was "simple", 74,1% of respondents mentioned it (Figure 15), while 'ADAM browser' was the browse strategy with the highest proportion of use - 32,1% of respondents mentioned it (Figure 16). Regarding occupation, all groups showed a preference for simple searching, with - perhaps, surprisingly - research staff and Others' category being the biggest users. All

age groups preferred the simple search, with users aged 25-34 being the biggest adherents (90% preferred this method). Students, academic staff, librarians and the Others' category preferred the 'ADAM Browser' strategy, with Others' being the biggest users (54,5% preferred this method). Of the browse strategies all age groups preferred the 'ADAM browser' expect for users aged 55-64 who favoured the 'multi option' browse strategy. The biggest users of the 'ADAM browser' were those aged 45-54 (45,5% preferred this method).
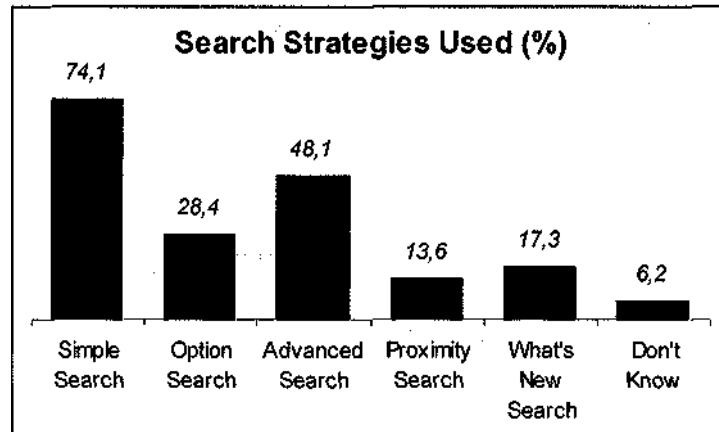
(Note: respondents were permitted multiple answers)
Figure 15: *Search Strategies Used*
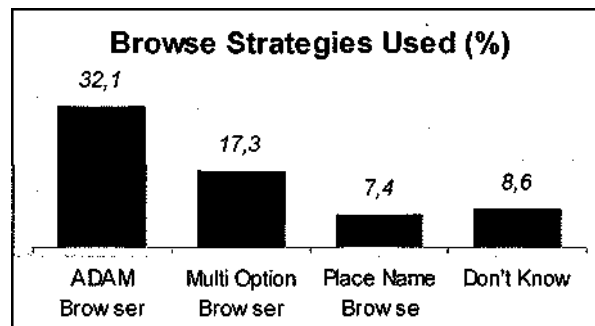
(Note: respondents were permitted multiple answers)
Figure 16: *Browse Strategies Used*

6.5.2. Online Help

Only 19%) of the respondents had called on online help (Figure 17). Men appeared to need more help than women - 27,3% of men asked for online help but only 13,7% of women. The online help function seemed to have been used by all the occupation groups, but (intriguingly) mostly by research staff (66,7% used the facility). Of course the use of the help command can be as much a function of the difficulty of the search as the ignorance of the user. All age groups made use of the help facility although users aged 45-54 were the biggest users (Figure 18). Respondents who have not called on online help were invited to indicate the reasons for non-use: 35,3%) of the respondents specified that they had not felt the need for help yet, while 30,9% of the respondents implied that they did not know that online help was available (Figure 19). The latter finding is particularly significant for the ADAM designers.

In addition, people were asked to indicate their opinion as to whether they believed that the online help function could replace the help provided by a person such as a librarian. Significantly - and perhaps a little worryingly, 51,2% of the respondents implied that the online help service can play the role of a human supporter, while 44% of the respondents had the opposite opinion, and 4,8% of the respondents did not answer this question. Despite the great number of respondents who indicated that the online help function can replace a human supporter, 18,6% of them had used the online help and - surprisingly - only 2,3% specified

that they would prefer to ask a person to support them (Figure 20). The supporters of the human intermediary provided the following reasons:
- Easier to explain to a librarian (Student)
- I think the online help is really important, but I find a lot of value in a librarian (Student)
- A computer can not understand you as well as another human- interpolation of information is better than entering multiple search terms as a person can point you in directions that you have not thought of before (Student)
- A librarian can advise & help to analyse & evaluate questions & results on an individual basis - generic online help is only adequate for basic searching info (Research Staff)
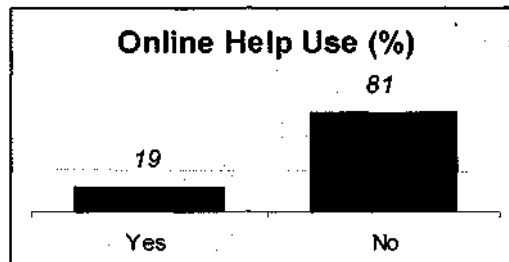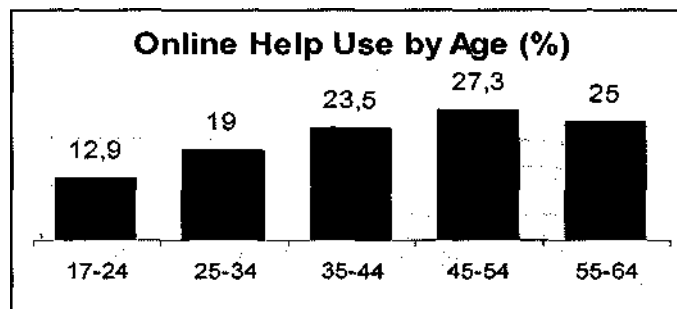

Figure 17: *Online Help Use*
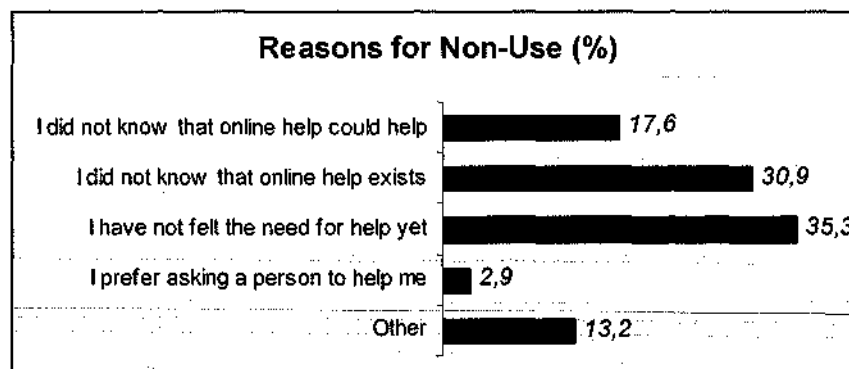

Figure 18: *Online Help Use by Age*

Figure 19: *Reasons for Non-Use of the Help Facility*

Online Help Use and Non-Use by Supporters of the Idea 'Online Help Can Replace Human Help' (%)

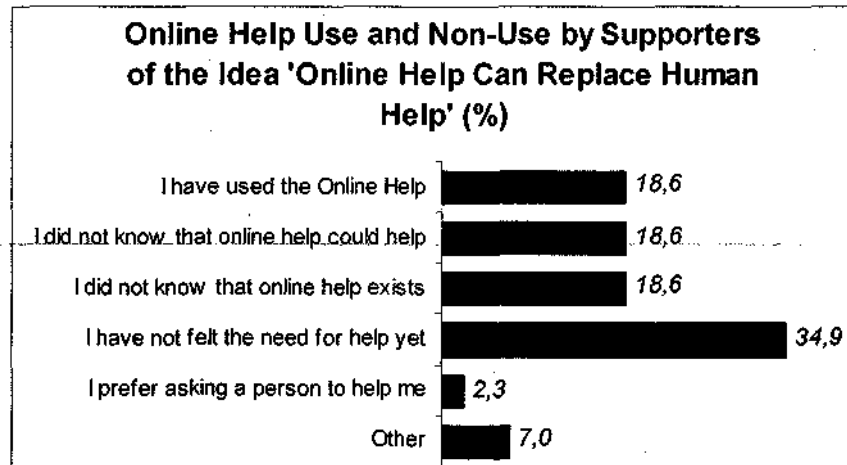|	
I have used the Online Help	18,6
I did not know that online help could help	18,6
I did not know that online help exists	18,6
I have not felt the need for help yet	34,9
I prefer asking a person to help me	2,3
Other	7,0

Figure 20: *Online Help Use and Non-Use by Supporters of the Idea that 'Online Help Can Replace Human Help'*

6.6. Advantages and disadvantages of ADAM service

Respondents were called on to comment on whether there were any advantages and/or disadvantages to using ADAM over a traditional library or not. More than two-thirds (63.1%) thought there was an advantage. The most users cited more than one advantage - and many overlapped. The most cited advantages were:

*   Speed, access to a wider source of information
*   24 hour access to information
*   Easy access from home
*   Quicker more comprehensive and up-to-date (information)

There were strong supporters of traditional libraries who raised doubts concerning the cost of online services, the time spent in front of computers, and the fact that few (full text) resources are available in electronic format (34.5% of the respondents mentioned at least one disadvantage). Other concerns were lack of human support and familiarity with PC and network problems. The following comments are illustrative:

*   Online services will never replace the usefulness of hard copy
*   It costs when I access to it from home
*   Sometimes you can get more additional information in a library that would not necessary be shown when using ADAM
*   Does not get you out of the house

Regarding occupation, all groups supported the existence of both advantages and disadvantages of ADAM service over a traditional library. However, the Others' category was the group of respondents with the highest percentage of admitting that ADAM has advantages over a traditional library (81,8%) and research staff with the highest percentage of disadvantages (66,7%). Likewise, respondents aged 55 to 64 was the group of respondents with the highest percentage of advantages (75%>). On the other hand, those aged 45 to 54 represented the group of respondents with the highest proportion of disadvantages (72,7%).

6.7. Viewing ADAM

Finally we wondered how ADAM was viewed conceptually. We all know what a library is, looks like etc. but what of an electronic service like ADAM? We provided respondents with one possible definition and asked them whether they agreed with this. The definition was 'a library based on the Internet that provides you with a collection of information, which is organised, digitised, and specialised in a specific subject area'. More than three-quarters (76.2%) agreed wholly with this definition; 19% had some affinity with it and 1.2% disagreed with it - 3.6% failed to provide an answer. Doubts about the use of the word 'library' figured most strongly in the comments of those who were not wholly signed

up to the definition. A few respondents said that, because they had not used the ADAM service extensively, they were not in the position to define it. More men (81.8%) seemed to accept the definition provided than women did (72.5%). Regarding occupational and age groups, students and those aged between 55 to 64 were those that showed the highest levels of agreement- 82.2%) and 100%, respectively.

7. CONCLUSIONS

The proliferation of information on the net and the need for organized and subject specialized information support the implementation of online gateways. Results of previous user studies have indicated that the concept of online gateways providing them with access to quality Internet resources is welcomed. At the same time, the 24-hour, quick, and direct access to information, and the fact that users are able to obtain information without leaving their desktop are some of the advantages of gateways. In addition, when users were asked to indicate whether they would use ADAM again or not on a scale of 1 to 4, where 1 is unlikely and 4 is likely, 82,1% of the respondents marked either 3 or 4.

Notwithstanding, the number of advantages there were people who emphasized the existence of disadvantages, too. These deal with the cost of online services, the time spent in front of computers and the fact that few information resources are available in electronic formats. Some other doubts raised were: the lack of familiarity with computers, together with the lack of human support and training. These disadvantages can explain the light and irregular use of ADAM. Few people use it in a daily, weekly, or monthly basis and among them librarians were the most regular users.

Our results confirm previous surveys on the use of online information systems. First of all, users take a simplistic approach to searching, while search strategies are used more frequently than browse. And secondly, few people use the online help function that can support their searches providing them with information on how to use advanced tools, such as the thesaurus. When users asked to indicate their reasons for non-use a great percentage of respondents specified that they had not felt the need for help yet, while an another high amount of respondents mentioned that they did not know that online help exists as a service. This result verifies what previous studies have disclosed that users do not always use information systems to their full potential, so that there are services, which are totally unknown to them. Preference for human support and training was a reason supported only by a small percentage of respondents. Though, when end-users asked to indicate their opinion on the question whether they believed or not that the online help function can replace the help provided by a human being, almost half of the respondents gave a negative response.

Summarizing, end-users are willing to use an online information system, which provides them with fast access to electronic information. Though they need to upgrade their search skills. Therefore, our findings seem to verify previous results that training is required, so users are not only aware of the services provided, but also they are familiar with them.

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