

# Researchers and Discovery Services survey and report: an overview

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# Objectives

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- ▶ The aim of this study was “to assess the use and the perceptions of resource discovery services by academic researchers in the UK.”
- ▶ The results are intended to help determine priorities for the future development of these services
  - ▶ Especially those run by or for of UK public sector or commercial organisations
- ▶ The study is deliberately intended to be wide-ranging
  - ▶ ‘Users’ are defined broadly:
    - > Professional researchers in key disciplines – from PhD students onwards
    - > Library / information services professionals

# Methodology

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- ▶ The study is essentially qualitative
  - ▶ We took care to interview a balanced sample of researchers according to discipline and length of experience
- ▶ We have tried to use the results to:
  - ▶ Paint a broad picture of behaviour and views
  - ▶ Capture some of the richness of the extensive interview data.
- ▶ Main source: telephone survey of 450 research-related personnel in UK universities
  - ▶ 395 researchers and 55 librarians and information officers
  - ▶ Across all disciplines

## Methodology (2)

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- ▶ More in-depth interviews and focus groups with postdoctoral researchers in a range of disciplines
  - ▶ To try to identify whether there were behavioural differences between researchers at the beginning of their careers whose experience was formed entirely in the digital environment and those who have faced a transition in working practices
- ▶ An Expert panel reviewed the draft
  - ▶ Senior academic librarians
  - ▶ Providers of commercial discovery services
  - ▶ Experts involved in the design of publicly provided discovery resources

# Definitions

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- ▶ “The means that researchers use to discover and locate the wide variety of information resources that might be relevant to their work”
  - ▶ Enabling discovery and location of many different kinds of information resources, including:
    - > journal articles;
    - > books and book chapters;
    - > grey literature;
    - > conference proceedings;
    - > datasets.
- ▶ These resources can be widely scattered across many different physical locations and websites
- ▶ It is not surprising that resource discovery services are also very diverse

## Definitions (2)

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- ▶ Resource discovery services usually act as a guide to relevant material rather than contain the material itself
- ▶ Well-established forms include
  - ▶ Bibliographic abstracting and indexing services such as Chemical Abstracts
  - ▶ Newer resource discovery services include general internet search services such as Google
  - ▶ Dedicated web portals such as Intute and H-Net can act as a guide to the resources for a specific discipline to be found on the web
  - ▶ Local services, such as institutional library catalogues and portals, and libraries and librarians themselves, are also important
  - ▶ Other people also act as resource discovery “services” for many researchers

## Definitions (3)

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- ▶ Some resources themselves can also act as resource discovery services
  - ▶ Bibliography at the end of a book
  - ▶ List of other articles cited at the end of a journal article
  - ▶ Some researchers search large e-journal collections to identify relevant articles.
  - ▶ Others search within datasets and large full-text collections for relevant resources.
- ▶ Discovery services increasingly seek to enable researchers not just to discover and locate, but also to gain access to the resources they need through linking and authentication.
- ▶ Increasingly, the boundary between resources themselves and discovery services is a permeable one
  - ▶ This trend seems likely to continue as new forms of content aggregation are developed.

# Key findings

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# Most used discovery services

Ranked research discovery service/source	Rating
1. General search engine	1.6
2. Internal library portal	2.0
3. Specialist search engine	2.1
4. Research colleague	2.2
5. Subject-specific gateway	2.4
6. A&I service, Bibliographic database	2.6
7. External library or library portal	2.7
8=. Browsing internal library shelves	2.9
8=. Citation index	2.9
10. Librarian	3.1
11. List-servs	3.3
12. Blogs	3.5

*Note: Calculated ratings from use frequencies*

## General satisfaction with discovery services

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### ▶ Researchers

- ▶ Researchers in the sciences are most satisfied with the resource discovery services
- ▶ Interviewees in arts and humanities have more concerns about gaps in service coverage

### ▶ Interviews with librarians broadly confirm this

- ▶ Librarians in the sciences and social sciences are generally satisfied with the range of discovery tools available
- ▶ Those in arts and humanities identify some gaps

## Users cannot always access the resources they have discovered

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- ▶ The main frustration is with actually accessing sources and materials identified
  - ▶ The 'last mile' of the research process which delivers the document or other source that has been searched for is the focus of concern
  - ▶ Lack of access to journal articles because of a subscription barrier is the most frequent problem
- ▶ Librarians agree with researchers that the key problem is accessing online journals rather than problems with the discovery tools themselves

# Means and ends are not clearly delineated

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- ▶ Researchers do not draw a hard and fast distinction between 'means' and 'ends'
  - ▶ Between discovery services and what is being discovered.
- ▶ A reflection of the real experience of research in the digital environment
  - ▶ Impact of design of services which move seamlessly from reference to abstract to full-text
  - ▶ Was not possible in the print-on-paper world of indexes and card catalogues
  - ▶ This is also the context of the frustration that results when it appears that the goal is so near, yet so far away

# One size doesn't fit all

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- ▶ Most researchers are using a range of resource discovery tools
  - ▶ Select an appropriate tool for a specific inquiry
  - ▶ Few examples of individuals relying on one or two sources to deal with all their research inquiries.
- ▶ The most heavily used resource discovery sources are:
  - ▶ General search engines
  - ▶ Internal library portals and catalogues
  - ▶ Specialist search engines
  - ▶ Subject-specific gateways are also important
- ▶ Researchers in social sciences appear to use a wider range of resource discovery services than other researchers

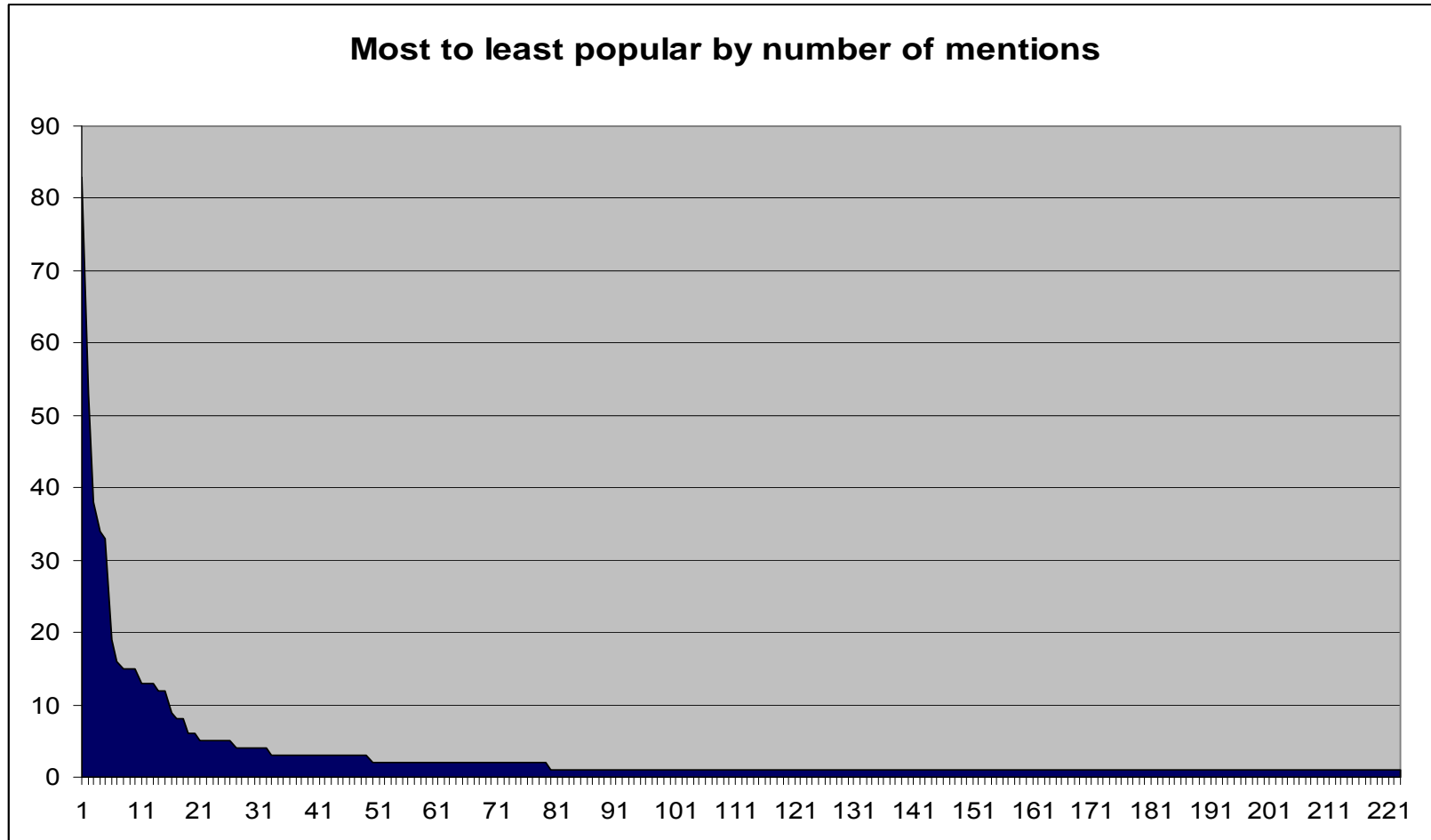
# There is a very long tail of discovery services used by researchers

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- ▶ Pattern exhibited by researchers' named discovery resources is very clearly a 'long tail'
- ▶ A very few resources are named by a large number of researchers
  - ▶ Google and its allied sites
  - ▶ Web of Science/Web of Knowledge
  - ▶ Science Direct
  - ▶ Some 'services' which are really interfaces e.g. Athens
- ▶ A few tools such as COPAC also feature fairly strongly
- ▶ All other resources are named by a very few individuals in each case.
- ▶ High recognition is clearly related to where they sit within the user's online journey
  - ▶ Athens
  - ▶ Portal interfaces
- ▶ Others have just captured enormous general mindshare

# The long tail

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## Researchers use discovery services to find a wide range of resources: journal articles are the most important

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- ▶ Virtually all researchers (99.5%) rely on journal article as a key resource
- ▶ Over 90% mentioned that they also use:
  - ▶ Chapters in books with many authors
  - ▶ Organization's web sites
  - ▶ The expertise of individuals
- ▶ Journal articles are by far the most important resource, listed in the top three by 71% of all those interviewed
- ▶ No other resource is mentioned in the top three by a majority of interviewees
  - ▶ The next most cited resource – monographs – is only mentioned by 32%

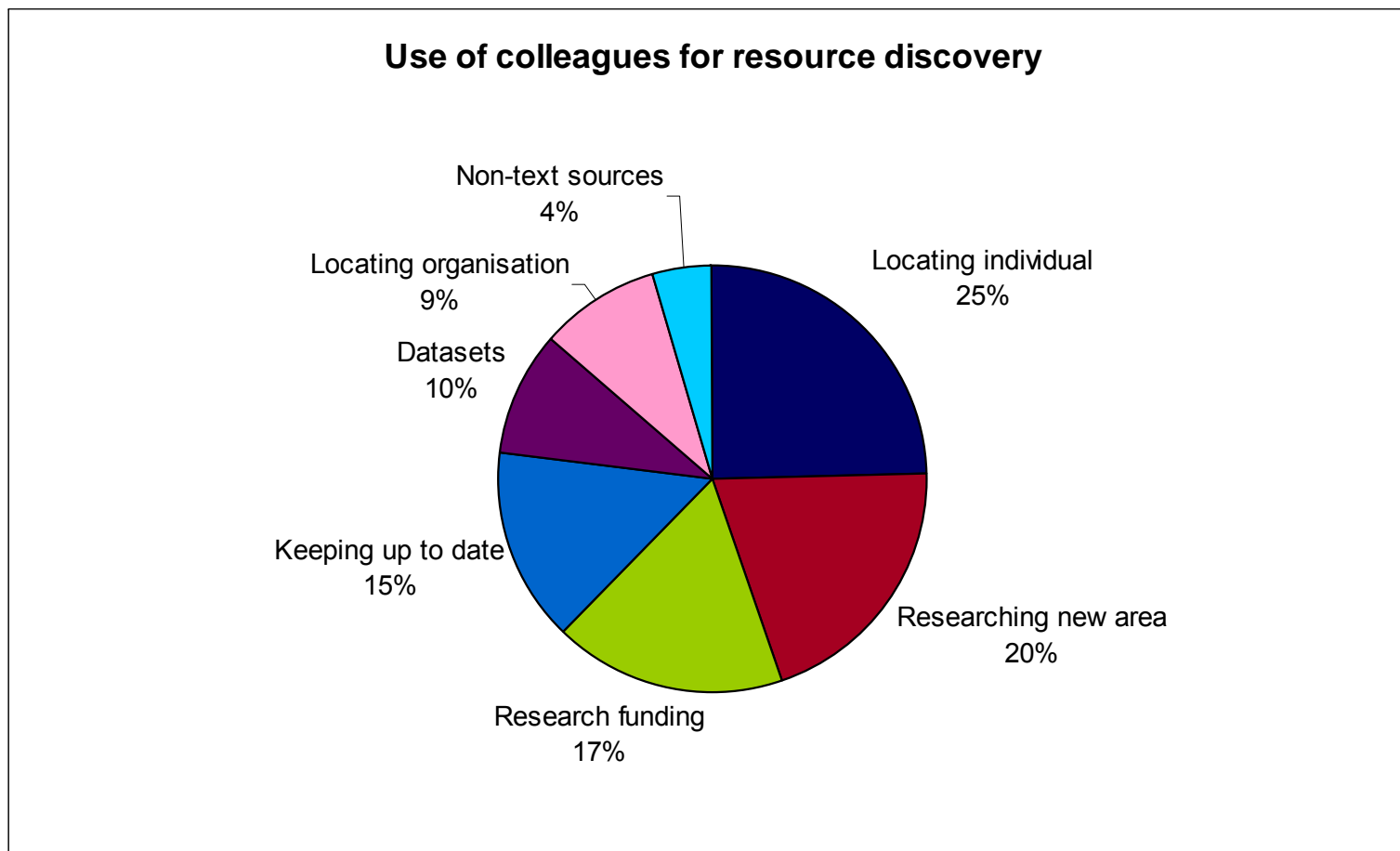
# Peers and networks of colleagues are extremely important

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- ▶ Research colleagues are one of the most important sources for virtually every type of inquiry
- ▶ Feature as important providers of advice to colleagues about resources and tools, and sources of recommendation for new services
  - ▶ A number of researchers said that they had tried Google Scholar as a result of colleagues telling them about it
- ▶ Networks of colleagues are especially important to postdoctoral researchers
  - ▶ Who tend to be least confident in their research discovery skills.
- ▶ Although researchers are contacting one another, this is usually one-to-one
  - ▶ Some use is made of email listservs, but they are not yet making use of other online social networking services

# Colleagues

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# When undertaking a search, researchers tend to refine down from large sets of results

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- ▶ The largest group of researchers (almost 50%) adopt a search strategy of refining down from an initial large sets of results
- ▶ A relatively small group (17%) start with a precise search
- ▶ There is a significant minority (34%) undertaking both types of searches depending on the exact nature of the inquiry
- ▶ The major driver for “refine-down” mode seems to be a fear of missing something significant
  - ▶ A scan through a superset of information seems to reassure users more than a precise, and possibly over-constrained, initial search
- ▶ Most academic researchers do not appear to see time constraints as an issue when searching for information
  - ▶ See resource discovery activities as part of research process and therefore maybe more willing to adopt search strategies that refine down from a large set of results rather than looking for quick answers which may miss something

## Information overload does not appear to be a major problem: researchers are more concerned that they might miss important information

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- ▶ Some researchers do feel overwhelmed by information
- ▶ But seem happy with plenty of information and feel confident that they can navigate it
- ▶ There were more complaints about being overwhelmed in by email
- ▶ When the researcher is carrying out a search he or she is in control
  - ▶ The email inbox can seem out of control
- ▶ A significant minority feel that general search engines deliver too many irrelevant results
  - ▶ This complaint occurred in every discipline area
  - ▶ But seems to be a particular problem for disciplines where language is similar to “general use”
  - ▶ Researchers would like to see a specialised scholarly resource to help overcome this problem
- ▶ Researchers’ main concern about their own resource discovery practice was that they might miss important information or knowledge that would affect their research
  - ▶ Through lack of expertise or time
- ▶ This led many to “breadth first” searching, resulting in a list of resources that they would sift through and refine down

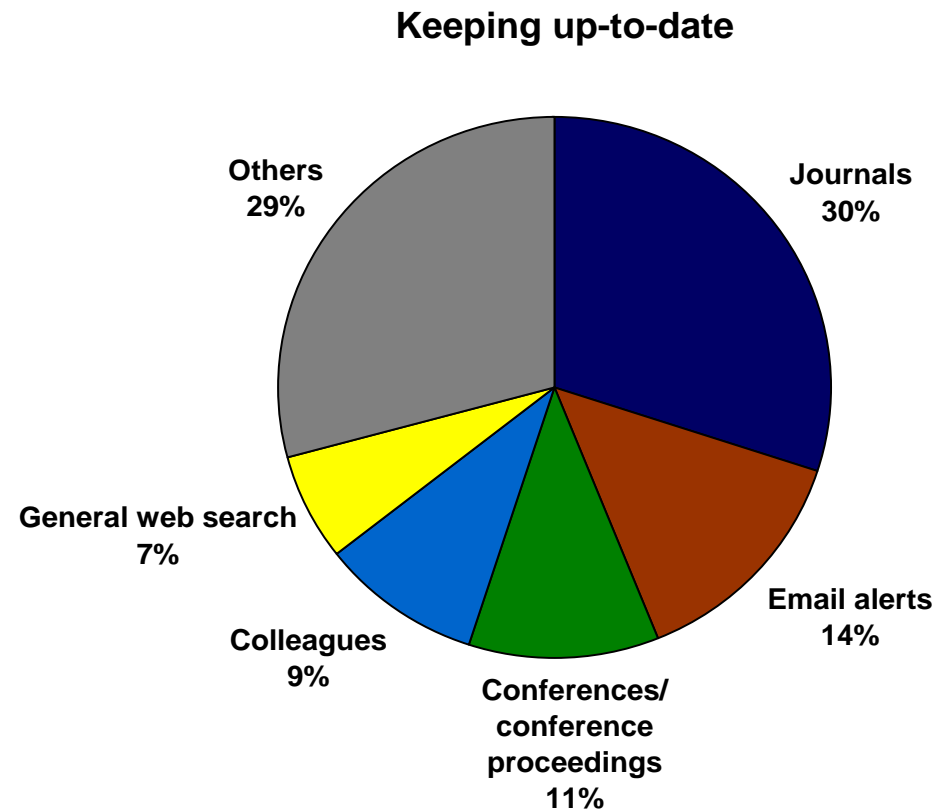
# Push is popular but blogs hardly feature

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- ▶ Emerging tools such as blogs hardly register
- ▶ A large majority of researchers (62%) get regular information updates and alerts from services pushing information to their desktops
  - ▶ Email is the preferred tool for this, not RSS feeds.
  - ▶ These are mainly alerts from journal publishers containing tables of contents
- ▶ A smaller but still significant use of alerts on sources of funding from research councils or specialist services
- ▶ Some researchers also specifically mentioned Zetoc as a useful service
- ▶ Wide range of other alert services being used in specific subject areas or from public bodies such as ministries or international agencies
- ▶ Listservs are most popular with arts and humanities researchers.
- ▶ A significant minority of researchers said that they avoided push services because their email was already too extensive

# Sources for keeping up to date

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# Library support is largely via embodied expertise, rather than personal contact

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- ▶ Internal library portals and networks are heavily used resources
  - ▶ But contact with librarians and information professionals is rare
- ▶ Appears to be because most researchers prefer desktop access over visits to the library
- ▶ If books are a major resource in the discipline, then physical library use is still largely unavoidable
- ▶ Not because of a negative view of librarians
- ▶ Some comments that librarians' subject knowledge was too basic to be useful
- ▶ Other comments about the 'invaluable' expertise of the subject librarian.
- ▶ It may not be clear to researchers that many of the resources they access on their desktops and the portals are the result of library negotiation and integration

## Librarians and researchers are generally in agreement, but there are some important differences

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- ▶ Many important points of agreement between librarians and researchers concerning
  - ▶ Quality of discovery services
  - ▶ Availability of resources
  - ▶ Gaps and problems that exist
- ▶ Researchers do their own searches in the vast majority of cases
- ▶ Librarians over-rated the importance to researchers of datasets and under-rated the importance of non-text resources
- ▶ Divergence of practice in searching
  - ▶ Researchers making heavy use of search engines
  - ▶ Librarians barely mentioning them as a key tool
- ▶ Researchers themselves were generally confident in their abilities in terms of discovery
- ▶ Librarians saw researchers as tending to be conservative in the range of tools used and relatively unsophisticated in their search methods
  - ▶ Librarians think that many researchers are not exploiting services to the full
- ▶ Librarians see it as a problem that they are not reaching all researchers with formal training
  - ▶ Most researchers don't think they need it!

## Key differences/similarities between researcher and librarian results

Theme	Researcher's results	Librarian's results	Divergence
Discovery services used	Most cited services are general and specialist search engines, and library portals.	Search engines hardly mentioned by librarians.	Fairly High
Role of training	Limited number trained in using resource discovery sources but not seen as obstacle.	All involved in formal training on resource discovery skills for researchers but failing to reach targets.	High
Skills of researchers	Large group (50%+) undertake simple searches but still significant percentage undertaking sophisticated searches or combination of simple/sophisticated.	Most believe that researchers only undertake simple searches.	Fairly High
Range of discovery tools used	Generally satisfied that range of services and sources used is good.	Some note that researchers tend to use services they are familiar with and used before rather than explore all sources.	High
Confidence in using resource discovery tools	Most are confident about their resource discovery skills.	Significant numbers believe that skill levels vary considerably and many researchers are not exploiting discovery tools to the fullest extent.	High
New services	Only minority identified any new services and, apart from Google Scholar, few specific new services mentioned. Scopus hardly mentioned.	Majority identified new services. Only 2 mentioned Google Scholar. Largest group mentioned Scopus.	High

## Lack of formal training is not seen as a problem

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- ▶ Only just over a third have received any formal training in using research discovery services
- ▶ Very few researchers see this as a major problem
- ▶ Most researchers appear confident in their use of resource discovery tools
  - ▶ Despite being largely self-taught
- ▶ Providing training on resource discovery tools is an integral part of many librarians' work
  - ▶ Comments from researchers suggest that most of this training is failing to reach large parts of a core target audience
- ▶ Even among those researchers who have received training, a number were trained a long time ago (on their own assessment)
  - ▶ The training would be unlikely to have covered online tools and resources

# Specific gaps in provision

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- ▶ Access to foreign language materials
- ▶ A problem by a significant number of researchers, mainly in the social sciences and arts and humanities.
  - ▶ Little distinction drawn between actual sources and discovery services
- ▶ Chapters in multiple-authored books hard to locate
  - ▶ No index to such works
  - ▶ They cannot be searched as they are not generally available in full text online
  - ▶ Mostly cited by social science researchers.
- ▶ Backfiles of journals online are too short
  - ▶ Particular problem for researchers in the sciences, both in chemistry and the life sciences.
- ▶ Specialist search engines needed
  - ▶ Plea for 'one stop shops' was made across a range of disciplines
  - ▶ Search engines covering a wide area e.g. "physical sciences"
  - ▶ For specific fields such as cultural studies and automotive engineering.

# The more digital the better

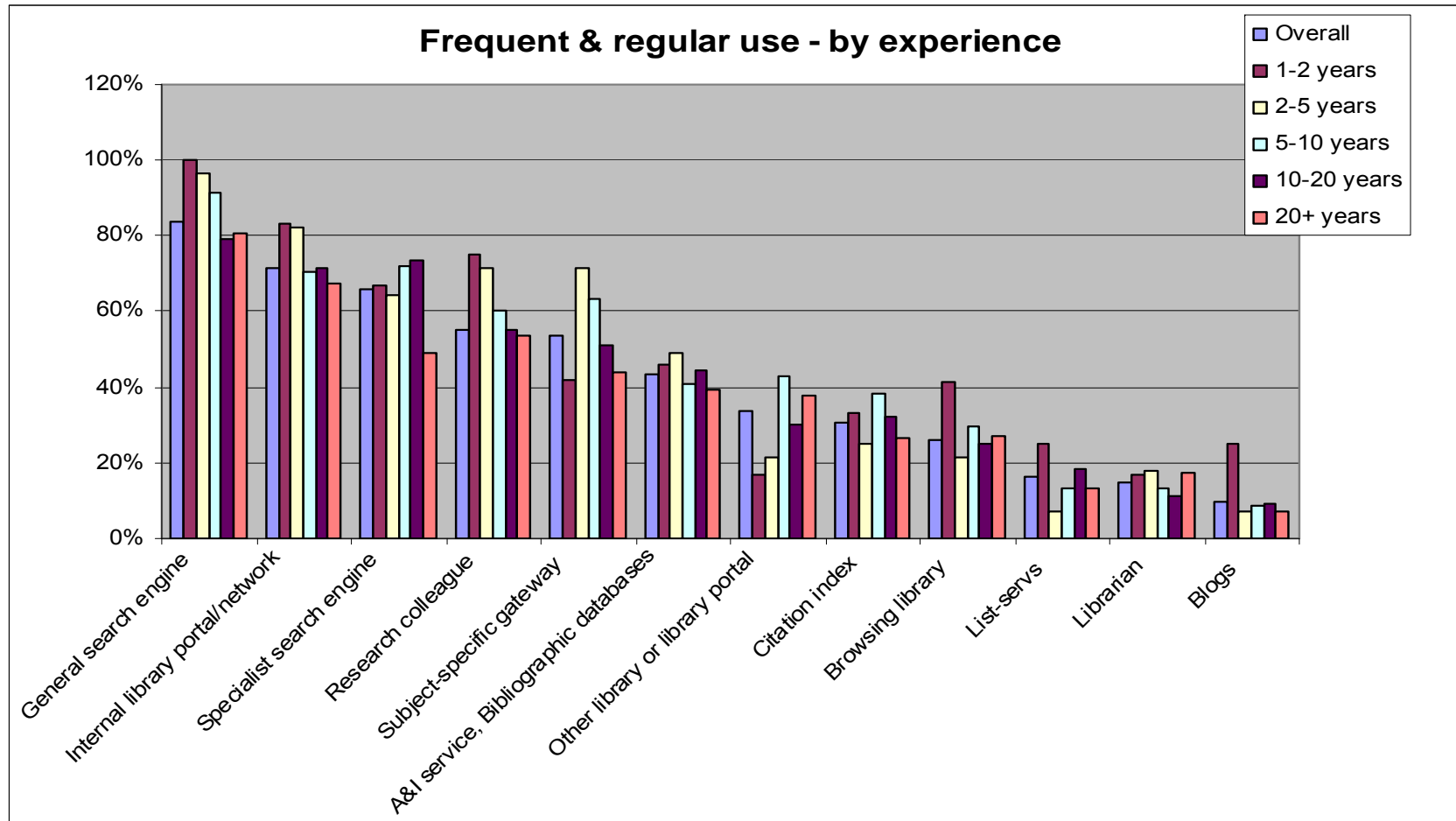
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- ▶ Biggest single difference between previous UK-based studies of information-seeking behaviour among academic researchers and the this study is print and electronic resources
- ▶ In previous studies, one of the main issues under investigation was how researchers saw electronic resources
  - ▶ How much they were used in relation to printed materials
  - ▶ Did researchers view electronic journals as having the same validity as print journals
- ▶ Issue barely arose in the present study
  - ▶ Many of the problems voiced by researchers today concerned not having access to *enough* digital resources, for example:
    - > The institution doesn't subscribe to the full text of the e-journal required
    - > Some journals are still not digitised
    - > Many electronic backfiles do not go back far enough
    - > Books aren't available to search online in full text
    - > Catalogues of foreign libraries aren't online
    - > Local authority archives aren't online
    - > Many source texts aren't digitised
- ▶ Academic researchers are now so accustomed to getting resources directly on their desktop that dissatisfaction when something isn't available is now normal

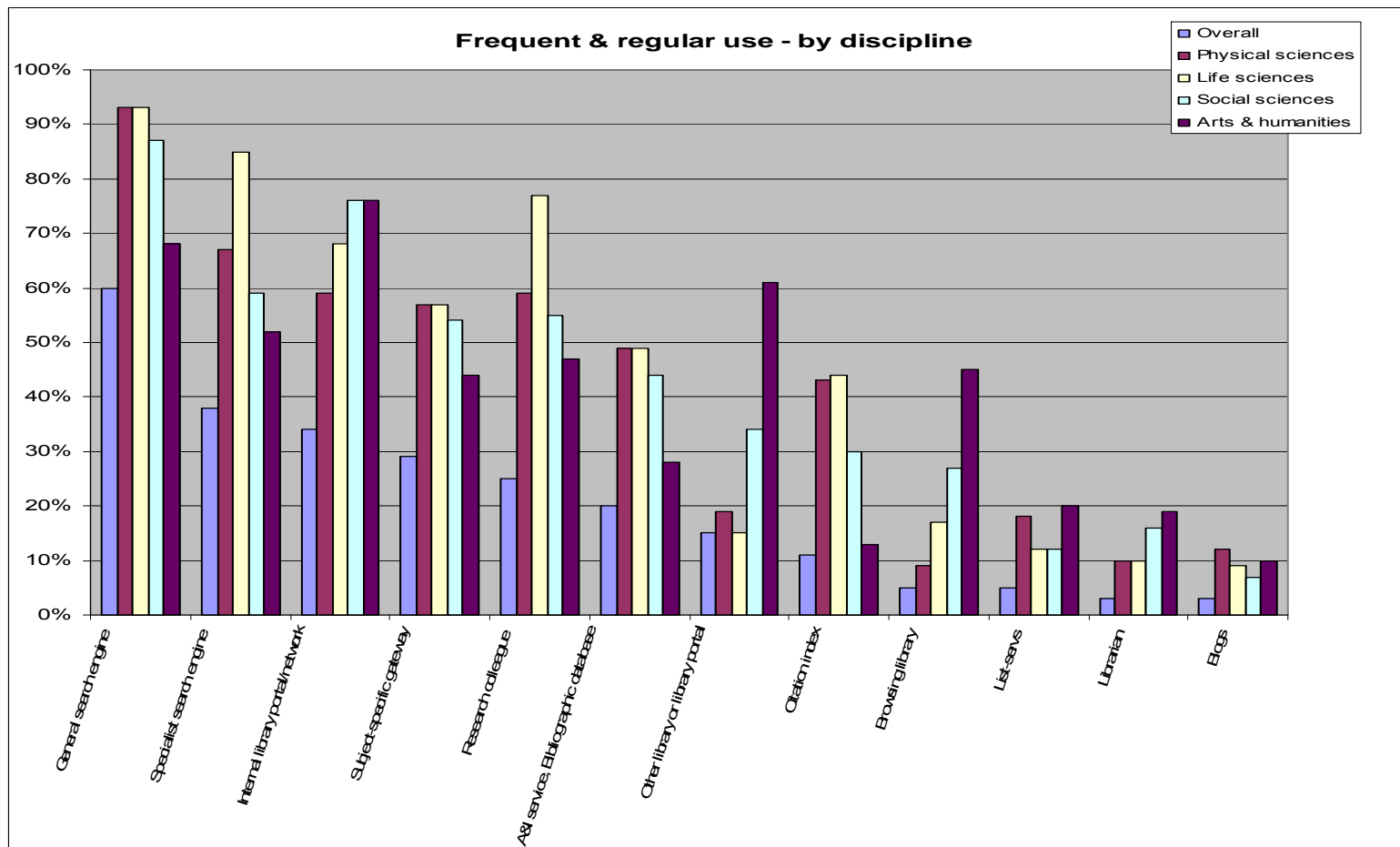
## Further highlights from the data

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# There is less difference between experience cohorts than you might expect

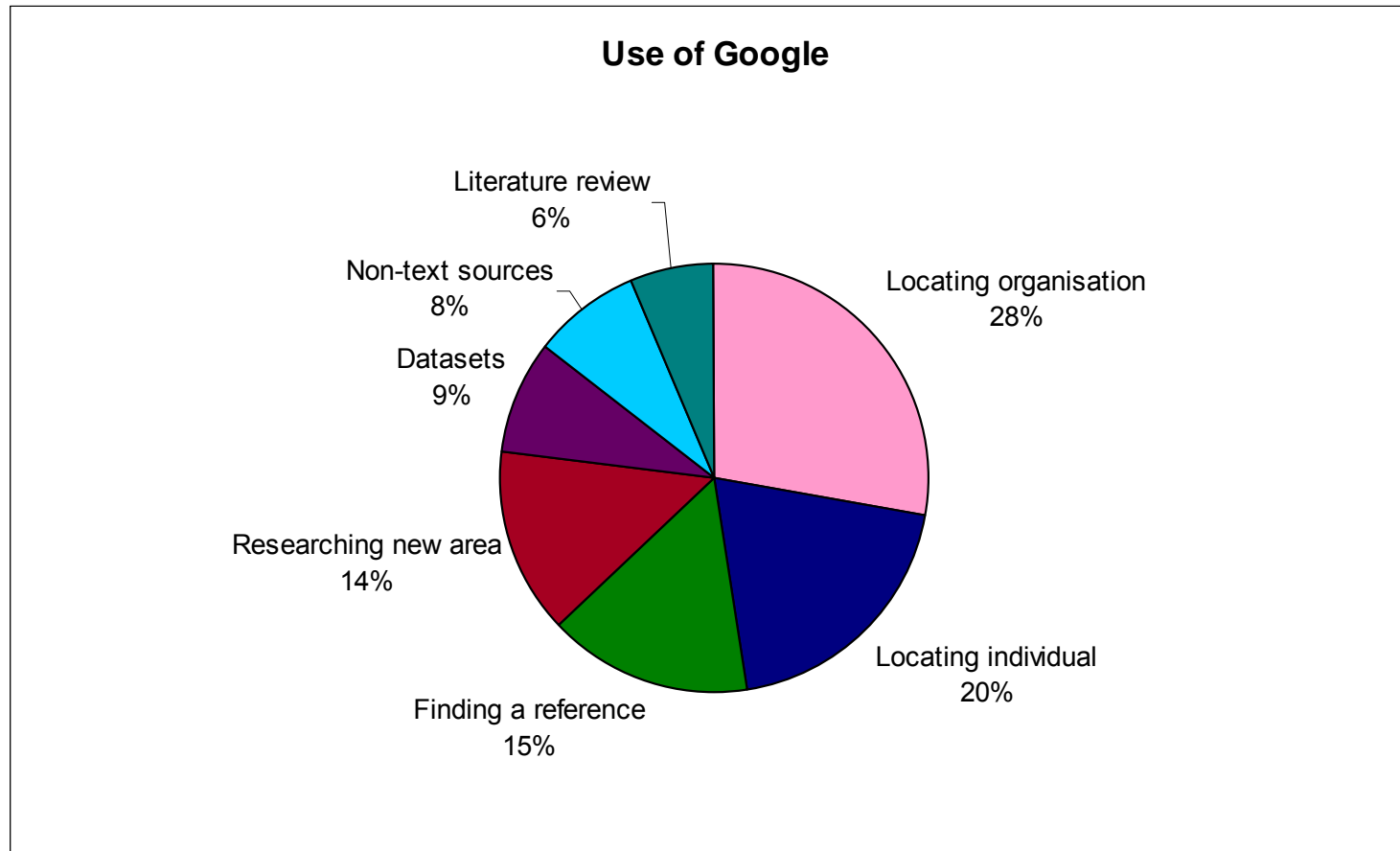


# Differences between disciplines are a little more marked



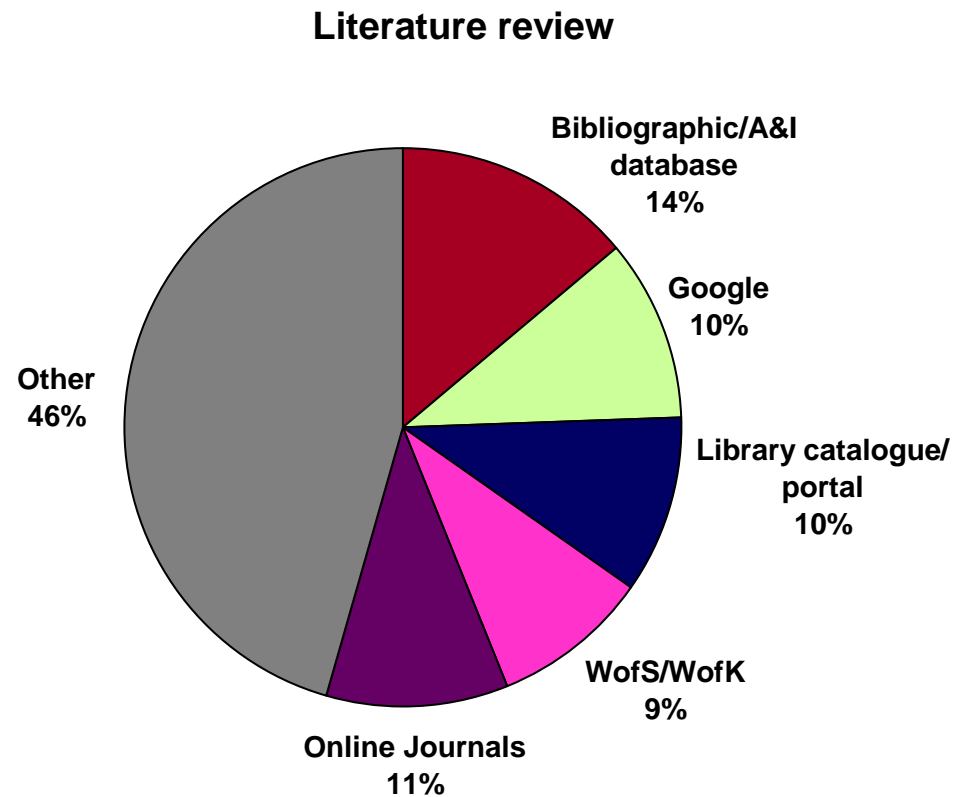
# Most use of Google is not mission-critical

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# Use of resources can range widely

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**Thank you**

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