

RESEARCH INFORMATION NEEDS OF PUBLIC POLICY ORIENTED RESEARCHERS AT A REGIONAL UNIVERSITY: ISSUES EMERGING FROM A PILOT STUDY

Faye Miller

This article presents the results of a pilot study of the research information needs, behaviour and source preferences of academic researchers at a regional university engaged in a public policy research project. In-depth interviews with three public policy oriented academic researchers undertaking interdisciplinary research projects at Charles Sturt University were analysed. Issues emerging from the study include the development of research literacy of academics and information professionals working in complex public policy landscapes and the nature of motivating and demotivating factors in the policy research process. Research questions for future studies are suggested. *AARL December 2008 vol 39 no 4 pp 253-268.*

Faye Miller. E-mail: fmiller@postoffice.csu.edu.au

The creation of social research to inform the development of public policy is a topical issue for academic social scientists.¹ The issue has gained momentum through the evidence-based policy movement originating in the United Kingdom.² In Australia, the role of academic research in advancing public policy development at international, national and regional levels remains very significant, as indicated by new Federal Government initiatives, such as the Excellence in Research for Australia (ERA), by discussion on the potential of open governance at the 2020 Summit in early 2008 and by the increase in funding for academic research to inform government policy making.

As a result of these initiatives there appears to be an increased need to develop and support academics so that they can demonstrate the quality and impact of their research projects in both academic and non-academic contexts. Discussion on the issue also draws attention to an apparent divide between the academic

research and public policy contexts, and to research that focuses on efforts to overcome this problem.³ The discussion suggests that there may be challenges for academic social scientists conducting policy research in demonstrating the impact of their work in the public policy context.

One key factor, identified throughout the literature as increasing the impact of research on policy, is the availability of research that identifies and addresses a research problem of relevance to policy development.⁴ Discussion also highlights the importance of research information services and sources, both inside and outside universities, to support policy researchers in their work.⁵ Studies conducted at Charles Sturt University (CSU) on academics' views on research⁶ and information-seeking behaviour of academics⁷ point to a demand for better access to research information through improved research information services, research support and organisational development that meet the actual needs of academic researchers based in regional university.

The rationale behind this study is that academic researchers should be studied in their natural context, and not viewed according to beliefs held by information professionals or other research support workers about how researchers behave or should behave. It is suggested, therefore, that there is a need to develop empathy for the real research experiences of academics. For example, those working in research information support roles would perhaps benefit from experiencing life as a researcher so that they can begin to empathise with those for whom they provide support. They may need to step into the shoes of those they serve to develop the emotional intelligence to provide a service that is responsive to researchers' affective as well as cognitive needs. Time pressures, combined with feelings of information overload, can create strong affective needs for the academic researcher, and emotional support may be required.⁸

In light of the current research development strategy for improving research quality and productivity at CSU, it seems worthwhile to explore this issue from the information-seeking perspectives of social scientists involved in policy-relevant research. An in-depth focus on the crucial phase of formulating a policy-relevant research problem and development of a research proposal may lead to a deeper understanding of the information needs, behaviour and source preferences of social science researchers in a regional university and of how they might be supported in demonstrating the impact of their projects in the public policy context.

LITERATURE REVIEW

Based on the assumption that literature on this specific issue would be sparse and fragmented, a broad search was conducted of both Australian and overseas literature, with no date or other limitations. The interdisciplinary nature of the topic meant that relevant literature was likely to be found in disciplines such as library and information science, information systems, public policy and public administration, social policy, higher education (research) and social sciences (education, management, health, social work, psychology, sociology, politics, economics and regional studies).

Much of the research describes the information needs and behaviour of policy makers and policy workers in the government sector. While there have been a number of studies on the information behaviour and needs of academics, there appears to be a gap in empirical research about the information-seeking experiences of academic researchers in university settings, particularly in Australian regional and rural universities, during the development of research relevant to public policy. The sparse findings of the literature review suggest that the topic would benefit from further research that takes an interdisciplinary approach.

Information-Seeking Behaviour of Regional University Academics

Of particular relevance to this study is Mills' research⁹ into the information-seeking behaviour of academics at CSU. The research identifies motivators and demotivators related to time, image, and characteristics of and attitudes towards sources, which influence information-seeking behaviour of academics in this specific context. Wilson¹⁰ discusses the concept of motivation in the context of activating information seeking. Mills expands on this definition, using the terms 'motivators' ('influences which encourage information seeking to take place') and 'demotivators' ('influences which 'stop, impede, deter or defer information-seeking behaviour') in describing the dynamic nature of human information seeking and the emotional dimensions involved.¹¹

As this present study intends to enhance understanding of this group by information professionals providing information and research support that is responsive to the needs of these academics, the terms motivators and demotivators are used in this article; they are especially significant in the current climate of research development. Also relevant are factors such as geographic isolation, intellectual isolation and information overload, which are identified as combining to make the work of academics, particularly those engaged in research, more challenging.¹²

Information Needs and Preferences of Social Policy Researchers

Throughout the policy science literature it is reported that because of the nature of social policy research, which is multidimensional, concerned with past, present and future trends, and user focused, policy researchers in both government and academic settings depend on timely access to a very wide range of information sources and channels.¹³ Recent studies into information sources for policy oriented researchers point to a number of emerging trends. In one of these, Koopmans¹⁴ identifies some information needs of European social science researchers involved in policy-relevant research. These include access to sources of interdisciplinary information, patterns and trends, sources for less experienced researchers, overviews of networks and unknown researchers/people in the area of interest. Maher and Burke¹⁵ suggest that social policy researchers in Australia prefer secondary to primary sources of information, as gaining an understanding of the information in its broader context is vital to their work. More recently, secondary sources such as systematic reviews for the social sciences, for example the Campbell Collaboration reviews,¹⁶ appear to be regarded as useful tools in both policy research and policy making.¹⁷

Jacobs¹⁸ conceptualises ‘information landscapes’ (defined as places consisting of information sources regularly accessed across a sector) for policy development in the United Kingdom. Using co-term network analysis, knowledge communities of policy makers and academic policy researchers are identified. Therefore, locating what is relevant in a highly complex information landscape has implications for developing both information literacy of researchers and specialist discovery services for the public policy context. Findings from a UK study by the Research Information Network¹⁹ indicate that, although social science researchers are generally satisfied with resource discovery services, there are specific gaps in multidisciplinary areas such as applied policy research. The reasons for these gaps are not reported, but they may suggest a lack of clear understanding of this specific area of research and what is needed to support it.

RESEARCH QUESTIONS

The objective of this pilot study is to develop an understanding of the information needs, behaviour and source preferences of academic researchers based in regional universities during the development of a public policy research problem of national significance. The research questions are:

1. What are the information needs of academic researchers in the development of a policy-relevant research problem?
2. What information sources do academic researchers prefer during the development of a policy-relevant research problem?
3. What motivators and/or demotivators influence the information-seeking behaviour of academic researchers in a regional university during the formation of a policy-relevant research problem?

METHODOLOGY

This pilot study was completed over a three-month period (August to October 2007). It employed a qualitative framework and used case study method consisting of the development of a research proposal and brief literature review, individual semi-structured face-to-face interviews with three researchers identified as carrying out policy-relevant research at CSU, analysis of transcripts and relevant research documents, and the production of a working research report.

Participants were two senior academics in the Faculty of Business (Participant 1 and 2) and one early career academic in the Faculty of Education (Participant 3). Both senior academics are experienced and established researchers and research project managers in their respective fields. The early career academic is relatively new to the university and currently working towards a PhD. A key characteristic of all three participants is the interdisciplinary nature of their research projects, which tend to have both social and economic policy implications at local, national and international levels.

POLICY RESEARCH INFORMATION NEEDS

The pilot study identified the following general information needs of public policy oriented researchers during research question and proposal development:

- They need to understand an issue from the multiple perspectives of many stakeholders in academic public policy research and to be sufficiently informed to communicate and debate in academic and non-academic contexts. Thus, information that is critical, balanced and non-partisan is essential.
- They need access to electronic current awareness information services to ensure the continuing relevance of their research, because research questions change over time in response to current changes, issues and priorities in public policy developments.
- They need to know where to look for research funding opportunities which match their research questions and interests.
- They need personal interaction (face-to-face interviews, informal discussion) with academic colleagues, policy makers, other stakeholders and users of research, to develop research questions and increase the potential impact of their research.
- Once they have formulated a broad question, they need to define the research problem and specific aspects of interest in relation to public policy development.

POLICY RESEARCH INFORMATION SOURCE PREFERENCES

Combinations of formal and informal information sources are used during research question and proposal development by public policy oriented researchers. A summary of the characteristics and value of these sources follows.

Research Assistants

Research assistants who are trained to carry out literature searches and also to organise and write syntheses of search results are preferred by the senior academics. This is because the work is time-consuming and because of the need to search broadly and to balance location of trusted sources with discovery of previously unknown sources. There is also a need for large amounts of print and electronic information to be sorted through so that key concepts and issues can be clearly identified and integrated before research sub-questions or interview questions are defined. This requires some judgement with regard to issues of empathy, perception and subject knowledge on the part of the research assistant.

Academic Literature and Library Services

In building a platform of knowledge from which to formulate research questions, a wide range of print and electronic information sources are preferred by the early career academic. The academic literature is fundamentally important,

including the CSU Library print collections (with a broad focus, covering multiple intercultural perspectives of an issue) and multidisciplinary electronic databases, particularly academic journal tables of contents alerts.

Government and Non-Government Agencies

Sources of public policy information include regional, national and international government and non-government agencies (websites, blogs, current awareness alerts and online audiovisual briefs). Non-government sources such as the Organisation for Economic Co-operation and Development (OECD) are useful for current comparative data, for example to gauge the impact of information technology on the economy across different nations. The early career researcher finds the increasing trend in digital audiovisual presentations particularly motivating as these provide a more engaging means of digesting and absorbing very quickly information that would take longer to absorb through reading a dry and lengthy policy document.

Media

The media (newspapers, television, magazines and websites) are mentioned by both senior academics as sources of information during question development; they maintain awareness and understanding of public perceptions of a newsworthy policy issue. Media information is useful for policy oriented researchers as it helps them to communicate and engage effectively with research participants and stakeholders in non-academic contexts.

Invisible College and External Contacts

For both senior academics and the early career researcher, informal discussion with colleagues and contacts outside the university can create awareness of current issues; this extends the individual platforms of knowledge from which research questions emerge. While senior academics have established networks and research groups built up over the years through regular attendance at conferences, the early career researcher relies on virtual networks such as specialist bloggers.

Personal Experience

Initial comparisons between information behaviours of two expert researchers and an emerging researcher reveal that experts who have built up knowledge of their field and relevant policy issues over many years are characterised by a confident sense of knowing their areas. Both senior researchers emphasise their own minds as a key source of information. However, for all three researchers, the process of initial research question formulation requires very little formal information seeking. As one senior academic stated:

I probably have in my mind at any one time lots of different questions that are researchable ... It's not that I sit down and try to identify questions. I know my area very well. So I know what

the public policy issues are and I know what the research is that needs to be carried out to inform those, the public policy debate in those areas ... I know what they are because they arise out of the work that I do, and so I have them in my head ... Previous work surfaces questions which then lead on to further questions (Participant 1).

The other senior researcher added:

at that stage it probably relies fairly much on things that you're already aware of from your general background ... I guess it's because I've worked in the area for so long. I'm familiar with issues so I'm not looking for sort of new issues. It would simply be keeping up with a bit of reading from journals and newsletters, perhaps from talking to colleagues, involvement with seminars, discussions with colleagues about an idea for a research project. This all creates awareness of current issues in my area (Participant 2).

In contrast, the early career researcher in the process of developing knowledge and orienting himself in his area described his research questions as:

the intersection of current interests, current formulations and conceptualisations within this area, both in terms of academia and public policy and also my own personal focus in terms of research (Participant 3).

Research Consultancies

For both senior academics, in some cases the research questions have been given to them by outside organisations or research consultancies. This is known as the research demand or user-driven model. In turn, research questions can emerge from projects which have been commissioned in the past:

Sometimes it's arisen out of specific requests by organisations ... where I've generated the issues, they are probably issues that grew out of the earlier research that was commissioned by these bodies and I've just extended those ideas. Sometimes data collected from interviews can be used to formulate policy implications, for example some people were critical of current government policies and funding and these views made me aware of certain problems for further research (Participant 2).

It appears that the interplay between these sources of information (past research projects – both investigator- and user-driven) can spark ideas for future projects and inspire new research questions.

MOTIVATORS AND DEMOTIVATORS

A range of motivating and demotivating factors associated with policy-relevant research information sources have been identified. Some motivating factors that encourage policy oriented researchers in their information activities are noted here.

Time Savers

In this time-pressured academic environment, research is an activity that must be balanced with other duties such as teaching, administration and other academic duties. Efficiency of information activities for research is thus a key issue, as illustrated by the following comment from the early career academic:

So if I can watch a video clip of someone talking about their policy for 20 minutes online, it will save me the three days it will take to wade through a 200 page policy document ... The audio content you can get online where relevant is helpful as well because you can multitask while you're doing it (Participant 3).

For both senior academics, having reliable and personalised research assistance appears to be a motivating factor, as it saves the busy academic time and energy. Searching for and extracting the relevant information from multiple sources not only saves time but potentially improves the quality and impact of the research project and assists with its timely completion:

For example, in a project looking at the issue of regional telecommunications, there are both economic and social policy implications. Wide research carried out by a research assistant gives the issue a broader context and this approach generated better discussion and debate at a conference where the paper was presented (Participant 2).

Matching Research Questions with Funding Availability

The availability of research funding opportunities that match issues or questions of interest appears to be a strong motivator for researchers:

If I see that a funding body is asking for grant proposals to be made, then I look at what it is they're looking for and then I map that across to what I know are the key questions anyway. So if I feel that what I want to research or the questions I've got in mind fit the brief from the funding body who is asking for grant applications, then it's fairly straightforward; it's a matter then of working up a research project proposal which answers the question ... So it depends on where funding is available, what is the extent to which I'd have to tailor what I think are the key questions to what the funding agency is looking for (Participant 1).

However, a recent CSU Research Development Staff Survey²⁰ found that many researchers do not know what research funding opportunities exist for them or where to find out about opportunities. CSU's Centre for Research and Graduate Training is addressing this by targeting individuals, groups and research centres with research funding information. For established researchers with knowledge of funding bodies from past experience, there is a need to maintain current awareness of previously unknown funding bodies and opportunities which can trigger new proposals. For both senior researchers in this study, the invisible college is a main source of research funding information, with colleagues alerting them to new relevant funding opportunities by E-mail.

Background Knowledge and Connections

Having solid background knowledge of the genesis and development of policy issues over time is a motivating factor. This facilitates past and present policy comparison, enabling a broader view from which to develop policy implications:

I look at things I've written in the past and tables and figures are now some years out of date and so I think 'ah, now that would be interesting, I could update that earlier research.' The advantage of that is that you've then got some time continuity where you can compare the present with the past. In my case, having been here for thirty odd years, some of my data goes back to the 70s and 80s. I can get quite a good feel for change over a lengthy period of time (Participant 2).

Having knowledge of particular authors and researchers in the area of interest with good reputations for producing quality work is motivating, as this can help dig out potentially useful information which is often hidden and difficult to locate, such as working papers or conference papers:

work reported by certain sorts of authors is usually going to be high quality and that determines part of how you search so you'd look for articles and books written by particular sorts of authors because you know they're doing high quality work (Participant 1).

One senior researcher finds it helpful to have a reliable network of contacts in outside organisations built up over the years, particularly within the region, for discussing potential projects and for seeking information for research.

As most of my work is done in this region, I find that regional organisations and government departments are generally more open and cooperative than city counterparts and so for me, the geographic isolation is not so much a problem (Participant 2).

Current Awareness of Relevant Information

Keeping up-to-date with latest developments in both the academic and policy worlds in areas of interest is noted as important for all three researchers. Subscribing to personal electronic alerts is particularly helpful.

I go to channels that are going to keep me current, currency is vital, so we've talked already about how you need a platform so you need an existing set of knowledge and from there you can formulate some questions. But beyond that you're going to need to know what's current, so you're up to date, your research is relevant. So things like tables of contents alerts from particular journals are really, really helpful. And access to online information is excellent because you're guaranteed currency. So currency is a very significant issue (Participant 3).

I get regular bulletins from different government agencies that keep me abreast of policy development and that then tells me what are the key questions that policy makers are trying to answer, and that is then what you store in your head, so you know that people want to know the answers to these questions (Participant 1).

Engaging Presentation of Information

The early career academic commented that engaging presentation of information is a motivating factor and referred to online video content in particular.

I think there's something about the fact that perhaps with video content you can see a real person talking to you ... that brings the information to life somehow, more like a two way communication more than one way, sort of absorbing a document (Participant 3).

Some demotivating factors that can discourage or de-energise policy oriented researchers during information activities are noted next.

Information Overload

The issue of information overload featured in all three interviews. The two senior researchers both expressed feelings of information overload (difficulties with finding the most relevant information for their specific research needs) in the electronic environment.

Obviously having the electronic databases we have now is very important to researchers. The more we can use those, the better, because you can reach information that you were never able to reach before. So that's very good, but of course that provides you then with an instant problem, then you get too much information. And then ... you have to sift through lots of stuff that's just irrelevant. So whilst on the one hand, electronic databases are very good in a sense that they bring to your attention information

that you wouldn't otherwise know about, they also provide a problem in the sense that you then have to find ways of trying to sort that information in a way that you can decide what's relevant and what's not, what's good and what's bad. And that's not easy. That's kind of a very important aspect of the information (Participant 1).

I guess one of the problems these days is if you're searching for stuff on the internet through Google or databases, you're simply trying to narrow down your field and you just obtain so many hits, you end up with thousands of things and a lot of the material is not really related, so the difficult part is trying to narrow down the scope and find the right keywords and qualifiers and so on to narrow down the field. Sometimes it's an excess of information, but often not so much an excess of information that you want but just an excess of related material. Sometimes within that large quantity you can still have problems of not quite getting enough specific material that meets the very narrow needs of the project you're working on, so that can be a problem (Participant 2).

Interestingly, the early career academic, while specifically discussing other information-seeking demotivators, did not emphasise information overload as a problem during his information-seeking experience. Instead, he mentioned it while discussing the aspects of information which he found helpful.

You'll be familiar with all the clichés about information overload, we all suffer from it and just being able to digest information that's communicated in that form [online audio-visual briefs of policy information] is very helpful (Participant 3).

Knowing Where to Look for Information

One senior academic expressed the need to be an informed supervisor, in that he must know where to direct research assistants when information is needed for developing a research proposal.

Another problem is you've got to know where to look ... to get the information that you need. So if I'm asking someone like a research assistant to conduct a search for some literature I've got to be able to tell them where to look, which authors, where to go, where to find them, to use my own expertise to guide somebody in a search for information which you know is probably there but you haven't actually seen (Participant 1).

Having to guide a research assistant in a search was expressed by the senior academic as a demotivator. This suggests that a research assistant with greater experience and knowledge of information sources in the particular area, who can operate independently, would be more motivating for the senior academic, as this would save them time having to look for information beforehand.

Intellectual and Geographic Isolation

The early career academic expressed a sense of 'intellectual isolation', particularly regarding lack of face-to-face informal research discussion.

There appears to be a lack of active research culture at this university. I have worked as a researcher in a more research-intensive university and there will be regular research discussion, informal face-to-face conversation with other researchers which can be encouraging and stimulating at early stages of research, which does not happen here too often (Participant 3).

The early career academic noted that, although technology has eased feelings of geographic isolation, the need for face-to-face personal interaction for research is still essential.

The other barrier would be distance from people that I need to talk to, located either in Europe or in the States. Now modern technology allows us to communicate across distances but I need to undertake the sort of face-to-face interviewing that we're doing here, so distance would be an issue but hopefully I can get some study leave to alleviate that (Participant 3).

Time-Consuming Work

All three researchers emphasised that a key demotivator is that information seeking for research question and proposal development is very time-consuming, and this is particularly demotivating in the time-pressured academic environment

The problem is simply time, finding information and having the time to sit down and find the information (Participant 2).

It's time-consuming to find stuff and it's also time-consuming to read it and understand it ... and to put it together in your head, so you can identify what the key issues are. So it takes time to do stuff (Participant 1).

just trying to do the research around full-time teaching, and so you've got your difficulties with time pressures and balancing information seeking with a range of other activities that demand your attention (Participant 3).

Lack of Critical, Balanced, Non-Partisan Information

One senior researcher noted a perceived lack of information sources that give a balanced, non-partisan view of a policy issue. This is demotivating, as development of a broader understanding of the issue is required for policy oriented research:

During the literature search and review stage, to identify the nature of the problem, there seemed to be a lack of critical information or alternative viewpoints to counter the mainstream information resources. This would have been helpful to gain a broader understanding of the problem. So you could say there is a need for more balanced and critical information as most of what is there is one-sided with a left- or right-wing bias. For example, some particular resources such as *Quadrant* are supposedly independent but are known to publish right-wing views or research centres such as the Evatt Foundation have a left-wing stance (Participant 2).

Database and Website Design

One senior researcher stated that the problem with electronic databases is that they are not as intuitive as they could be and time must be spent learning how to use them, and then re-learning them when they inevitably change from year to year. These are some key demotivators for this senior researcher, and potentially for many others. The solution here appears to be to employ research assistants who are experienced at using the databases and can easily adapt to these changes.

Sometimes they're [electronic databases] not very intuitive, you have to spend time learning them ... [Intuitive meaning] So you can easily guide yourself, things like EBSCO ... they're not as easy to use as they could be and you'd probably need a bit of training on how to use them properly. I'm not a very experienced user of those systems, that's why I tend to use people who are good at doing that sort of stuff for me. And then I just give them the search parameters and off they go and they bring stuff back to me. But when I was doing it on my own, as I used to before I employed research assistants, you become quite skilled in using the databases yourself. But the thing is the databases tend to change a lot from year to year, so unless you keep your skill levels up you tend to fall behind in your ability to use them (Participant 1).

In contrast, the early career academic described a regularly accessed website as 'huge and confusing'; however, because the website provides much authoritative and policy-relevant material needed to complete his PhD research project, the motivation to spend time searching through web pages outweighs the frustrations associated with navigating the website.

CONCLUSION

The objective of this pilot study was to develop an understanding of the information needs, behaviour and source preferences of academic researchers based in a regional university in the formulation of a public-policy-relevant

research problem of national significance. The study has identified a number of policy research information needs and source preferences of academic researchers and motivating and demotivating factors that can encourage or hinder the policy research process. The small number of participants in this study means, however, that the conclusions drawn must be tentative.

This pilot study has shown that there is potential for further study of the information behaviour and needs of academic researchers in relation to the policy research process as it is experienced in university contexts. There is a need to focus on fostering and improving services and sources based on identified motivators and combating identified demotivators. In many cases, the researchers in this study speak about a particular information source or service in terms of both positives and negatives. What may be viewed as a helpful solution may actually develop into a problem or series of problems, which in turn need to be solved.

Another emerging theme is the development of information literacy of researchers and those working in research support roles within the changing environment of academic research in the public policy area. In this specific context, some potential research questions include:

- What is 'research literacy'?
- What does it mean to be 'research literate'?²¹
- Are there growing implications for the skills and training of next generation researchers and research information professionals, in areas of 'research literacy'?

Further study of the nature and prevalence of these reported needs and of motivating and demotivating factors is required to broaden our understanding of these issues. Among questions for future study are:

- Are there intergenerational differences in academic researchers' information behaviour and source preferences during the process of interdisciplinary policy-relevant research?
- Are there implications for improving the design of research information services/systems in response to current and future needs in this area?

ACKNOWLEDGEMENTS

This study was undertaken in partial fulfilment of the requirements of Charles Sturt University's Master of Applied Science (Library & Information Management). The author wishes to thank the participants in this study, her research supervisor Dr Annemaree Lloyd-Zantiotis, Professor Ross Harvey, Dr John Mills and the referees for their constructive comments on earlier versions of this article.

NOTES

1. H T O Davies, S Nutley & PC Smith *What Works? Evidence-Based Policy and Practice in Public Services* Bristol Policy Press 2000; P Saunders & J Walter (eds) *Ideas and Influence: Social Science and Public Policy in Australia* Sydney UNSW Press 2005; G Harman 'Australian Social Scientists and the Transition to a More Commercial University Environment' *Higher Education Research & Development* 2005 vol 24 no 1 pp79-94.
2. Davies, Nutley & Smith op cit.
3. D Stone, S Maxwell and M Keating 'Bridging Research and Policy' Paper presented at the International Workshop funded by the UK Department for International Development, Warwick University 2001 at <http://www.gdnet.org/pdf/Bridging.pdf> viewed 5 July 2007; Saunders & Walter op cit.; K Lewig, F Arney & D Scott 'Closing the Research-Policy, Research-Practice Gaps: Ideas for Child and Family Services' *Family Matters* 2006 vol 74 pp12-19.
4. A Majchrzak *Methods for Policy Research* Beverly Hills Sage 1984; B W Hogwood & L A Gunn *Policy Analysis for the Real World* Oxford Oxford University Press 1984; A Anlezark, S Dawe & S Hayman *An Aid to Systematic Reviews of Research in Vocational Education and Training in Australia* Adelaide National Centre for Vocational Education Research 2005; Lewig, Arney & Scott op cit.
5. P Davies The Campbell Collaboration – *Improving Social Policy* at <http://www.cilip.org.uk/NR/exeres/B7E085AF-3963-42FEB0F166CB3DDA0B08> viewed 10 August 2007; N I Koopmans 'What's Your Question? The Need for Research Information from the Perspective of Different User Groups' Paper presented at the EuroCRIS Conference Gaining Insight from Research Information August 29-31 2002 Kassel Germany at <http://www.unikassel.de/CRIS2002/files/pdf/Koopmans.pdf> viewed 5 July 2007; Davies, Nutley & Smith op cit.; N Jacobs 'Co-term Network Analysis as a Means of Describing the Information Landscapes of Knowledge Communities across Sectors' *Journal of Documentation* 2002 vol 58 no 5 pp548-562.
6. B C Hemmings, P Rushbrook & E Smith 'Academics' Views on Publishing Refereed Works: A Content Analysis' *Higher Education* 2007 vol 54 no 2 pp307-332.
7. J J Mills 'Intellectual Isolation, Geographical Isolation and Information Overload of Academics at a Rural University' *Rural Society* 2002 vol 12 no 3 pp263-271.
8. J J Mills 'Information Seeking Behaviour of University Academics' PhD Thesis Charles Sturt University 2002.
9. *ibid.*
10. T D Wilson 'On User Studies and Information Needs' *Journal of Documentation* 1981 vol 37 no 1 pp3-15.
11. Mills 'Information Seeking Behaviour' op cit.
12. Mills 'Intellectual Isolation' op cit.

13. Majchrzak op cit.; C Maher & T Burke *Informed Decision Making: the Use of Secondary Data Sources in Policy Studies* Melbourne Longman Cheshire 1991; P J Haas & J F Springer *Applied Policy Research: Concepts and Cases* New York Garland 1998.
14. Koopmans op cit.
15. Maher & Burke op cit.
16. Davies op cit.
17. Anlezark, Dawe & Hayman op cit.
18. Jacobs op cit.
19. Research Information Network *Researchers and Discovery Services: Behaviour, Perceptions and Needs* 2006 at <http://www.rin.ac.uk/researchers-discovery-services> viewed 10 August 2007.
20. A Smith & K Barrett 'Research Development Staff Survey 2007' at http://www.csu.edu.au/research/researchers/survey_summary.doc viewed 15 October 2007.
21. A Lloyd-Zantiotis Personal communication 3 October 2007.