A Study into the Use of Applied Library and Information Studies (LIS) Research in New Zealand Libraries

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Abstract

The purpose of this research project was to determine the perceptions of information professionals in New Zealand regarding applied LIS (Library and Information Studies) research.

To achieve this aim, a purposive sample of 130 tertiary and non-profit government libraries / information centres was selected from the *New Zealand Contacts in Libraries* directory. The chief librarians or library managers from these institutions were invited to offer their opinions using a brief questionnaire that included Likert and Verbal Frequency scales (Appendix A). Alternatively, the questionnaire could be distributed to another information professional from the organisation.

Practitioners' reasons for and against consulting research, their tendency towards conducting it themselves and encouraging others in their employ to produce it, and ways by which the relationship between LIS research and practice might be improved were assessed using the survey instrument. The amount of research consultation undertaken by survey participants was analysed according to the following variables:

- Highest library / information qualification, whether it contained a research methods / project component, and how recently it was completed;
- Major subject area (other than library / information studies) of tertiary-level study;
- Experience in current position;
- Level of management responsibility;
- Specialty area of responsibility;
- Library / information centre size;
- Organisational context of the library / information centre;
- Participation in conferences / professional meetings.

The study found that the amount of research consultation by information professionals comprising the sample was low, and levels of research production and encouragement for employees to conduct research were even lower. Participants most often consult the research to stay current with trends and developments in the field of LIS, and to support workplace activities such as decision-making, problem-solving, planning and evaluation. The research is most often not consulted due to time constraints. Despite small data sets that necessitated some caution in the interpretation of results, associational relationships were apparent between the amount of research consultation and all of the participant variables listed above, with one exception (level of management responsibility). Information professionals responding to this study also indicated that the most effective strategy for improving the current relationship between the LIS research and practice communities is the encouragement of research productions that include practical guidelines for the application of results in a workplace context.

1 Introduction

The literature repeatedly indicates that LIS research use by practitioners across the information sector is remarkably low (McClure and Bishop, 1989). Numerous reasons have been postulated to explain this phenomenon, and often focus on the nature of LIS research, and its perceived inability to be effectively applied to the context of operational practice.

This study aimed to address a gap in the literature concerning our local predicament, by investigating the degree to which this phenomenon currently occurs in New Zealand tertiary and non-profit government institutions according to information professionals working in these contexts. The objectives of such institutions concern research and learning and/or the formulation and implementation of government policy. As such, they are inextricably linked to issues of information use, generation and dissemination, and employees fulfilling these objectives have been selected as key informants for this study.

As the intended consumers of applied research productions, such practitioners' motivations for and against research consultation are crucial to our understanding of this phenomenon. However, opinions from the practicing community are too infrequently canvassed when the ostensibly widespread lack of research use by practitioners is explored.

Information professionals' tendencies towards producing research and their opinions of appropriate remedial actions for improving the current relationship between LIS research and practice were also investigated in this study, to give focus to any future efforts at developing and promoting applied research production and use.

2 The Problem

2.1 Theoretical framework

The nature of LIS research provides the theoretical perspective for this study. Typically, LIS research is conceptualised in the following ways:

Basic research (also referred to as pure, theoretical, or scientific research) is conducted to achieve an enhanced understanding of a phenomenon without direct consideration of how the research findings will be applied to specific, practical or real situations.

Applied research is a pragmatic workplace tool that uses formal methods of inquiry to solve practical problems, or discover new knowledge that can be utilised immediately in real world contexts. It can be applied to assist with operational activities, such as decision-making. *Action research* is a subset of applied research. Characterised by its low generalisability (or, external validity, whereby the results are applicable to a variety of settings) and reliability (the capacity to replicate with accuracy and consistency), it attempts to identify problems in a specific organisational setting, and to suggest strategies to deal with those problems (Busha and Harter, 1980, pp. 7-8; Hernon, 1989, pp. 1-2; Hernon, 1991, p. 5; Hernon and McClure, 1990, p. 14; McClure, 1989, p. 282; Powell, 1997, pp. 2-3, 44). Examples of library-related action research include collection evaluations, or explorations for the implementation of automated library management systems.

These two fundamental research types should not be construed as dichotomous; a continuum exists between basic and applied research. Diagnostic and problem-solving techniques are derived from the application of basic research, and these techniques can be applied to the delivery of services in a specific context (Schön, 1983, p. 24). As such, the findings from basic research can subsequently be used to provide solutions for pragmatic problems. The findings

from applied studies, in turn, can supply the foundation from which the theoretical problems of basic research originate (Busha and Harter, 1980, p. 8).

2.2 Problem statement

In Busha and Harter's words (1980, p. 8),

> ...on the whole, completed studies in librarianship have been of an applied nature. Like any developing discipline, the study of library science is characterized by a weak body of theory and research findings that are often irreconcilable with previously acquired knowledge.

There are three elements to this observation – the lack of linking theoretical frameworks, the non-cumulative nature of applied research productions that are neither replicated nor integrated with previous studies, and the self-perpetuating cycle that eventuates. Each will be explored here.

2.2.1 The lack of theoretical frameworks

LIS research does not have a long history, with the majority of it conducted in the latter half of the last century. Trahan (1993, p. 73) comments that library research "is at a relatively primitive stage in its development when compared to the research literature of other disciplines...there has been little, if any, increase in research activity in librarianship." Yet an extensive body of research literature defines and underpins a profession, and is necessary if that profession is to mature (Biggs, 1991, pp. 74-5; Childers, 1984, p. 522; Hernon, 1989, p. 23).

One essential characteristic of a profession's body of research is its theoretical frameworks. Theories take the form of universally accepted and generalisable truths that encompass "knowledge about broad principles and methods as opposed to specific practices" (Busha and Harter, 1980, p. 14). They emerge only once research results have been sufficiently and successfully replicated.

As Grotzinger notes (1981, p. 45), fundamental to the advancement of a profession

> ...is the need for the field to test the various myths, assumptions, rules-of-thumb, and other conventions by which it has operated for so long a time, to link concepts which have been proven through testing to be valid, and thereby establish theories indigenous to the field itself.

Due in part to its recent development, the LIS research literature does not yet constitute a substantial body of knowledge underpinned by such theoretical frameworks (Biggs, 1991, p. 73). LIS, as a practitioner-driven field with an underdeveloped theory base, gives little attention to basic research.

2.2.2 The nature of applied LIS research

Applied research, with its direct relevance to operational practice, predominates in LIS (Childers, 1990, p. 258; Hernon, 1989, pp. 1-2; Van House, 1991). A problem arises from the fact that such applied research often takes the form of action research productions that display a limited capacity to be replicated and applied to various contexts. Such replication tests the generalisability and reliability of the research results, by ascertaining the extent to which the same results are observed in other contexts. Researchers that do not replicate or integrate previous studies in their works are often guilty of producing repetitive, episodic research comprising non-longitudinal 'snapshots' taken at one particular time, with only internal validity (the findings are exclusively accurate for one particular setting) (Hernon, 1989, p. 24; Hernon and Schwartz, 1998, p. 318; McClure, 1989, p. 282; McClure and Bishop, 1989, p. 136). LIS researchers rarely build upon a continuing series of projects so that their own work is part of a coherent whole and such fragmentation reduces the overall impact of the research produced (Van House, 1991, p. 97). In-house research, in particular, tends to be disparate, non-cumulative, and descriptive reporting with subsequent limited applicability beyond its original setting, rather than critical interpretation that may serve to

illuminate widely-applicable trends and patterns (Childers, 1990; Townley, 1991, p. 270).

2.2.3 A self-perpetuating cycle

The problem is exacerbated and perpetuated by the fact that "library managers require research that has high internal validity for their particular library setting" (McClure, 1989, p. 285). The result is the continuing production of non-cumulative research that cannot be widely utilised to assist operational processes in a variety of library and information centre contexts, combined with a simultaneous lack of research replication that hinders the development of linking theoretical frameworks.

Arguably, such internal validity for specific settings could still be achieved in conjunction with a comprehensive consideration of previous LIS research in that area, with action research endeavours usefully drawing upon previous research findings for planning, decision-making, and evaluation processes. As Townley notes, by applying a rigorous research process, a librarian "can address a local problem and contribute to the further development of the profession and its theory" (Townley, 1991, p. 270).

2.3 Definitions

Chief Librarian:

An information professional in charge of a library / information centre.

EFTS:

Equivalent Full-Time Staff.

Information Professional:

Throughout this study, 'information professional' denotes qualified LIS practitioners. The term is used here interchangeably with the word 'practitioner', which should not be taken to include para-professional or technical library staff.

Library / Information Centre:

An institution that is responsible for providing information to its clientele. The term 'information centre' is used interchangeably with the term 'information service' in this study.

Library Manager:

An information professional in charge of a department, unit or area within a library / information centre, who reports to a chief librarian.

LIS:

Library and Information Studies (in New Zealand, 'studies' is often used in place of 'science'). LIS research under consideration in this investigation is international, and not limited to research produced by or specifically for New Zealand information professionals.

Research:

Any systematic effort to generate new information, create new knowledge, or produce new interpretations of existing knowledge or information, suggesting attention to method, and exactitude in obtaining and analysing results (McClure and Bishop, 1989, p. 128). It involves data collection (quantitative or qualitative), evaluations for the purpose of establishing facts, or the presentation of a model or conceptualisation (Hernon and Schwartz, 1998, pp. 316-7). In this study, unless otherwise stated, it is specifically defined as being applied.

Tertiary:

University, Polytechnic, or College of Education academic institutions.

2.4 Objectives, Research questions and Survey questions

Objectives	Research Questions	Survey Questions please refer to Appendix A
1 To collect demographic information relating to the gender and age of participants, for the purposes of affirming the generalisability of the sample.		Questions 1.1 and 1.2
2 To determine the perceptions of information professionals concerning their use of LIS research	What are the perceptions of information professionals concerning their use of LIS research? How often do information professionals consult the research? Why do information professionals consult the research? Why do information professionals **not** consult the research?	Question 3.1 Question 3.2 Question 3.3
3 To determine the perceptions of information professionals concerning their production of research	What are the perceptions of information professionals concerning their production of research? How often do information professionals undertake research? How often do information professionals encourage others in their employ to conduct research?	Question 3.4 Question 3.5

Objectives	Research Questions	Survey Questions
		please refer to Appendix A
4 To assess the effect of certain participant variables on the use of research by information professionals	Do any of the following participant variables affect the amount of research use by information professionals:	
	☐ Highest library / information qualification, and whether it contained a research (methods or project) component?	Question 2.1
	☐ Date of completion of highest library / information qualification?	Question 2.2
	☐ Major subject area (other than library / information studies) of tertiary-level study?	Question 2.3
	☐ Experience, indicated by number of years/months in current position?	Question 2.4
	☐ Level of management responsibility?	Question 2.5
	☐ Speciality area of responsibility?	Question 2.6
	☐ Library / information centre size, indicated by number of EFTS professional and para-professional staff?	Question 2.7
	☐ Organisational context of the library / information centre?	Question 2.8
	☐ Level of participation in conferences and professional meetings?	Questions 2.9 and 2.10

	Objectives	Research Questions	Survey Questions please refer to Appendix A
5	To determine the extent to which Schon's "Reflection-in-Action" model applies to the current situation in New Zealand libraries / information centres.	To what extent does Schon's "Reflection-in-Action" model apply to the current situation in New Zealand libraries / information centres, as perceived by information professionals?	Questions 2.9, 2.10, 3.2, 3.3
6	To determine the perceptions of information professionals concerning the relationship between LIS research and practice	How do information professionals feel the relationship between LIS research and practice might be best improved?	Question 4

3 Literature Review

3.1 Introduction

This literature review examines research relevant to the current study. There are few recent discussions or studies of this particular topic; the key authors published works during the late 1980s and early 1990s, and important studies were undertaken in 1987, 1989 and 1991. For this reason, the following review is strongly influenced by literature from this era.

It has been segregated into themes that correspond with this study's objectives (section 2.4), commencing with a discussion of methodological approaches used in similar studies, before looking at instances of practitioner use and production of research and variables that may affect them. Schön's Reflection-in-Action model and its relevance to this study are then explored, followed by a discussion of the relationship between LIS research and practice and promulgated methods for improving the channels of communication between the two. The literature review concludes with a consideration of the rationale and significance of this study, and a short summary.

3.2 Methodological approach

There is much commentary, but significantly less previous research on this topic. McClure and Bishop set about determining the quantity, quality, impact and importance of LIS research in their 1989 study and interviewed a selected group of 23 active LIS researchers concerned with diverse subject specialities, based in Canada and the US. Participants had to meet at least two of the following criteria:

- Display a proven track record of producing research reports, papers and monographs;
- Regularly obtain and complete funded research projects;

- Regularly participate as an editorial board member/editor for scholarly LIS journals, and/or belong to a research-related committee (McClure and Bishop, 1989, p. 133).

The use of such strict criteria combined with the small size of the sample resulted in largely unanimous answers expressing "guarded optimism" as to the future status of LIS research, and one cannot confidently say that the results obtained were generalisable to the population of LIS researchers as a whole[1]. The active researchers selected by McClure and Bishop were intensively involved with the research process as transmitters of LIS research and the bias intrinsic to such a sample was modified for purposes of the present project, that is, the receivers of LIS research, in the form of New Zealand information professionals, were deliberately selected as the sample. Furthermore, twelve years have passed since McClure and Bishop conducted their survey, and its findings may today be somewhat anachronistic. An appropriate sample that reflected current trends generalisable to the situation in New Zealand was required for this study.

Looking specifically at the situation in New Zealand, Cave produced a comprehensive report of an enquiry into research in library and information work in 1991. He distributed a questionnaire to the chief librarians of New Zealand's seventeen largest libraries (comprising the seven university libraries, seven public library systems, the Parliamentary Library, DSIR and the National Library) to determine the attitudes to, and participation in, LIS research by information professionals engaged in library practice. The respondents were deliberately selected as those most likely to undertake research in their institutions, and a list of 12 questions was distributed that invited written comment. Disappointingly, Cave noted that the responses were at times "too

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[1] The sample size (23) is too small. Elsewhere in their study, McClure and Bishop discuss the lack of a critical mass of LIS researchers, and respondents estimate the size of the LIS research body in Canada and the US to be approximately 300 (p. 137). Yet according to a configuration by Krejcie and Morgan (cited in Leedy, p. 211), the sample size required to adequately represent a population of 300 is 169, considerably greater than the number selected here.

vague or generalised" to be of use (Cave, 1991, p. 24).

Using a different methodological approach, in a 1987 study, Stewart surveyed library practitioners in public library systems to assess their awareness of LIS research and determine the extent to which research had been effectively disseminated for their needs. Stewart's respondents were asked to examine six selected examples of research, and signify how and when they gained awareness of these examples, if they were indeed familiar with them already. Stewart's Thurstone scale survey provided the capacity for a measurable quantitative approach. Attempting to select six examples in the recent literature with which any New Zealand library practitioner might reasonably be familiar would make a daunting task, and this aspect of Stewart's approach was therefore not adopted in the current project.

However, compared with Cave's qualitative methodology, the quantitative approach adopted by Stewart was selected as more suitable for the present study. A brief questionnaire that incorporated single-option selections, Likert and Verbal Frequency scales, and the opportunity for respondents to indicate their individual views on certain issues (with "Other – please specify" options) was used. Data could therefore be analysed in a quantitative fashion, and unstructured individual comments by participants could be clustered to reveal any additional trends.

3.3 Research use and production by practitioners (Objectives 2 and 3)

This study examined information professionals' incentives for consulting previous research, and explored those factors restricting their opportunities to do so. The amount of research conducted by practitioners was also examined, but reasons why practitioners do or do not conduct research were not investigated. However, Cave noted that encouragement from senior management to employed or potential staff is an important factor in developing

research production by the practising community. In Cave's own words (1991, p. 19),

> ...given an appropriately supportive attitude by potential employers to the experience so gained [through research activities], it is possible to find good people to undertake research under the direction of more senior colleagues.

These sentiments are echoed by Powell (1997, p. 9), who warns "if libraries and other employers are going to expect librarians to equip themselves to do research, then they must be prepared to provide appropriate incentives, support and rewards." Such observations were considered in this study as a way of deducing information professionals' overall impressions of research's place in practice, and participants were asked how often they encourage others in their employ to conduct research related to their employment in the information sector.

The literature frequently affirms that LIS research findings are under-utilised because of problems with physical availability, in the form time and resource constraints, that prevent the intended consumers of research from accessing it. The present study was not concerned with problems faced by LIS researchers trying to disseminate their research findings in an effective way; it focused on research access from the users' viewpoint. Do funding constraints affect access to the professional literature and how much time is available to information professionals for locating and retrieving the research?

Time is widely agreed to be scarce – decision-makers are rarely able to gather all the information emanating from research studies ideally needed to make accurate, informed choices (Hernon, 1989, p. 9; McClure, 1989, p. 284). Funding constraints are most often noted as a barrier to research performance by practitioners (Cave, 1991, pp. 11-12; Finnie, Frame, and Stewart, 2000, p. 86) rather than as an obstacle to research use. Yet arguably a constricted library budget will negatively affect the procurement of professional literature for use

by that library's staff. Therefore, this constraint to research production was adopted in the present survey as a conceivable obstacle affecting research use.

Problems with the intellectual availability of research productions are also considerable. Poor bibliographic control restricts access to previous research; local in-house reports and write-ups often do not receive national visibility and published works are not always adequately indexed (Hernon, 1989, p. 24). One of the respondents in Hernon's editorial remarked that, "as a practitioner, I can testify that our professional research is difficult to access (ironic, no?)" (Hernon, 1994, p. 275). In a local context, Cave noted that "a substantial proportion of the investigations undertaken [in New Zealand libraries] are not written up and published in any real sense...Of five projects reported by one large public library only one had resulted in publication available to outsiders, the other four being recorded only in unpublished reports distributed internally." Consequently, some respondents to Cave's survey "were (reasonably enough) not aware what work was being undertaken elsewhere" (Cave, 1991, p. 8).

The Dunedin Library Research Group recently examined the amount of research currently conducted in the workplace by New Zealand library practitioners, as well as the impact of the finished project on the employee's organisation (Finnie, Frame and Stewart, 2000). Their study's findings mirrored those observations noted above: research works by library practitioners "had usually been disseminated to some extent within the parent organization, but only a very few had been formally published beyond the parent organization or in a widely disseminated print or electronic journal" (Finnie, Frame and Stewart, 2000, p. 85). Research that is not formally published and is dissipated only as 'grey literature' within an organisation or group eludes those for whom it is most useful (Cave, 1991, p. 9).

"A regular bulletin reporting on research in progress" was advocated by Cave (1991, p. 22) as a remedy to this problem. Similarly, most respondents to the

Dunedin Library Research Group's survey indicated that they "could see value in having a centrally available research register" to list research currently underway, or recently completed in libraries (Finnie, Frame and Stewart, 2000, p. 86). Inspired by these suggestions, the current study examined information professionals' views of proposed current awareness services in library / information newsletters or list-serves to encourage access to, and awareness of, research produced by both the practicing and academic LIS communities.

The Dunedin Library Research Group also discovered that research productions were typically "initiated to meet some current need…and provide answers and directions likely to affect library operations" (Finnie, Frame and Stewart, 2000, p. 87). This observation was explored in the current study through an assessment of factors that motivate practitioners to consult the research, and its respondents were asked how often they consulted research to support operational activities specific to their library / information centre. Antithetically, they were also asked how often they consult research to assist with the execution of self-motivated research not necessarily intended to solve problems specific to their workplace.

This perception noted by the Dunedin Library Research Group reinforces the notion that too much action research with high internal validity is produced by practitioners to be of widespread use. Its non-cumulative nature and limited capability to be functionally replicated and applied to a variety of settings beyond its original context renders it incapable of successfully addressing practical problems occurring in other workplaces. Respondents to this survey were asked how often this was a factor in their decision not to consult the research. There are two aspects to be considered here – the presentation and content of the research. Information professionals in the workplace may disregard research when its content fails to address operational concerns. Furthermore, research that does address practical problems in the workplace may not be used and implemented by practitioners because it is presented in a way that is difficult to understand and apply. Both factors are explored in this

survey as potential reasons for the underuse of research by practitioners.

3.4 Variables affecting practitioner research use (Objective 4)

A set of questions was used in this survey to determine the employee and training profile of each participant, thereby enabling an assessment of variables that may affect the participants' attitudes towards research. This approach was inspired by Stewart, who stratified her study's sample into the following five levels to compare research awareness across an organisational hierarchy:

1. Chief librarians
2. Librarians in charge of stock selection
3. Librarians in charge of the largest branch libraries
4. Librarians in charge of the smallest branch libraries
5. The most recently qualified librarians

The present study attempted to reflect contemporary New Zealand library management structures, and consequently Stewart's categories were collapsed into two levels. This enabled comparisons of respondents' mean research use across simple divisions of organisational hierarchy:

1. Chief librarians (denoting librarians in charge of central or branch libraries)
2. Library managers in charge of a department or area within a library

Stewart's study revealed that the higher the respondents' managerial level, the greater their awareness of, and familiarity with, LIS research, and thus the more likely they were to apply research results to their organisational setting. Stewart also asked her respondents to specify formal qualifications they had obtained, and their level of participation in professional activities and conferences (discussed further in section 3.5). In the present study, the

following participant variables were added to those used by Stewart, and all were analysed for their potential impact on participants' levels of research use:

- Highest library / information qualification, whether it contained a research methods / project component, and how recently it was completed;
- Major subject area (other than library / information studies) of tertiary-level study;
- Experience in current position;
- Specialty area of responsibility;
- Library / information centre size;
- Organisational context of the library / information centre.

An organisation's size may have ramifications for its funding of research endeavours, and procurement of research resources. The number of EFTS (equivalent full-time staff) - both professional, and para-professional - employed by a library/information centre was used in this study as a more indicative measure of organisational size than a consideration of the number of registered clients, or the number of monographs held and/or serials subscribed to. Databases of library clients can contain a significant amount of redundant data, and a library's hard-copy holdings may not directly reflect its number of clientele, since many services may be offered using online resources. However, personnel records are generally more current and reliable.

Stewart's results revealed a disappointing performance of recently qualified librarians in research awareness. She notes, "studying at library schools does give opportunities for reading widely in library literature – the like of which are rarely found again in professional life" (Stewart, 1987, p. 61). The respondents' highest library / information degree is assumed to have involved the most rigorous attention to research skills and methods. LIS is often accused of lacking a critical mass of practitioners trained in research methods and able to:

- Alleviate the methodological and content problems widely perceived as existing in LIS research (Busha and Harter, 1980, p. 7; Hernon, 1989, p. 23; Robbins, 1989; Van House, 1991, pp. 91-2);
- Consume research findings in a critical and imaginative fashion (Biggs, 1991, p. 82; Montanelli and Stenstrom, 1986; Townley, 1991, p. 270).

problem) more appropriately describes the process practitioners face in the workplace than rational problem-solving (Schön, 1983, p. 39).

Thus, largely anecdotal and often tacit knowledge obtained through the process of practice is more applicable and relevant to pragmatic operational tasks such as decision-making than clearly defined, theoretical knowledge drawn from a static store. This tacit knowing is not easily elucidated, but professional practitioners are able to reflect on it by turning thought back onto their actions (Schön, 1983, p. 49).

Schön asserts that this practice-based reflective knowledge is communicated amongst practitioners through descriptive reporting – the situation-specific 'how we do it good' genre (Losee and Worley, 1993, p. ix) – conferences, association-meetings, and conversations that are difficult to capture and commit to written, published form (Schön, 1987). This would suggest that there is reduced impetus for information professionals to consult published research when addressing dynamic, pragmatic workplace concerns. However, Stewart's 1987 results indicated that practitioner attendance at such knowledge sharing events might inspire a more proactive approach to formally published research findings also. Stewart's respondents indicated that they first learned of three from the six research projects selected as reference points for the survey through conferences, meetings or conversations with colleagues.

This study analysed the extent to which Schön's model can be said to apply to the current situation facing New Zealand information professionals, by determining how often the research is used to assist with the workplace performance of operational functions such as problem-solving, decision-making, planning, and evaluation. Survey respondents were also asked to define their level of passive (i.e. attendance) and active (i.e. paper/seminar presentation) participation in conferences and professional meetings, and these scores were compared with the respondents' amount of research consultation.

3.6 Improving the relationship between research and practice (Objective 6)

The literature repeatedly asserts that action research with direct relevance to decision-making and practice predominates in LIS (Childers, 1990, p. 258; Hernon, 1989, pp. 1-2; Van House, 1991). This view concurs with Schön's model as discussed above, and the observation that traditional scientific research procedures do not seem to recognize the dynamic nature of organisational problems. McClure and Bishop explored the perceived quantity, quality, impact, and importance of LIS research (as specific dimensions of its recognised status) in their 1989 study, and discovered that LIS is a practitioner-driven field with an underdeveloped theory base. Biggs asserts that librarianship not only lacks a "coherent body of esoteric and unique basic knowledge", but also that it would quite likely be irrelevant to library practice, even if it did exist (1991, p. 79). This is perhaps one reason why it does not.

Inextricably linked to this phenomenon is the relationship between LIS research and practice. The literature abounds with discussions of the perceived dichotomy between academic researchers (those conducting the research) and the practitioners (for whose use and application such research is intended) (Hernon, 1989, p. 23; Biggs, 1991, pp. 81-3). Idealistically, researchers provide the basic research from which diagnostic problem-solving techniques can be derived and applied to the problems of practice. In turn, practitioners supply the researchers with problems for investigation and test the utility of research productions (Schön, 1983, p. 26).

However, the relationship is not as straightforward as this summary would suggest. It has been noted that "library researchers appear to have a different model (a very rational one) for how decisions are made in the 'real world' which differs significantly from the model proposed by Schön and the actual behaviours of library managers" (McClure, 1989, p. 289). McClure and Bishop's respondents felt that researchers do not often present and articulate

their results in a way that can be applied to practice, and that many practitioners are incapable of intelligently consuming and understanding the research results (McClure and Bishop, 1989, p. 136; McClure, 1989, pp. 283-4, 290). This is not so much an indictment on the intellectual capacities of practitioners as it is an accusation that the academic research is too esoteric, impractical and remote to supply results of a practical and applicable nature (Hernon, 1989, p. 24). This study attempts to discover whether information professionals in New Zealand concur with this view, and consequently choose not to consult the research literature because of it.

Academics would perhaps maintain that a theoretical framework emerging from applied research is needed to link into a cumulative whole the episodic and disparate productions of locally specific action research, and provide the underlying concepts that can be used for diagnostic problem-solving purposes in the practical domain. Bierbaum echoes this sentiment, arguing that LIS "needs a unifying principle" or paradigm to guide "research and applications of professional practice" (1990, p. 18). In Van House's words (1991, p. 88),

> Theory provides the underlying concepts and methods for diagnosing and solving problems; practice supplies the problems and tests the utility of the results.

Yet cross-fertilisation between these two communities appears to be rare in LIS, and a communication chasm indubitably exists (McClure and Bishop, 1989, p. 141; McClure, 1989, p. 284, Schön, 1983, p. 308). Valid strategies have been proposed to bridge this gap between LIS researchers and practitioners (see for example McClure and Bishop, 1989; McClure, 1989; Townley, 1991), which mostly encourage greater collaboration and communication between the two. Practitioners should not function as mere consumers of the researchers' products, commentators advise, but should be encouraged to share their practical experiences and problems with the research community and thus participate more directly in the research process (Schön, 1983, p. 323).

However, information professionals' views regarding the ways by which this dichotomous relationship might be improved have not been much discussed in the literature. This survey's participants were asked to indicate their impression of the value of these postulated solutions. In particular, participants were asked how valuable they feel encouraging staff enrollment in courses to improve their skills as consumers and producers of research is in the effort to ameliorate interactions between research and practice. Lack of researching expertise was identified by the Dunedin Library Research Group as one of the top-scoring barriers to research performance by practitioners (Finnie, Frame and Stewart, 2000, p. 86), and the active encouragement of appropriate staff education was postulated by Cave (1991, p. 28) as a solution to this problem.

3.7 Rationale and significance of the study

As noted, research enables a profession to mature, and a profession is defined by its body of theory and the research literature supporting it. The theoretical framework claimed by LIS emanates from other social science disciplines including communications, economics, computer science, psychology, and sociology, and its resultant multi-disciplinary nature cannot therefore be perceived as relating uniquely to LIS (Busha and Harter, 1980, p. 8).

Consequently, the literature on this topic contains contentious debate regarding the conceptualisation of LIS as a profession. Biggs (1991, p. 72) asserts that "librarianship is neither a discipline nor a profession as traditionally defined, and it has no real prospects of becoming either one." Main (1990) and Childers (1984) echo this sentiment, though in more measured tones. Shaughnessy (cited in Powell, 1997, p. 6) notes, "Of the two primary marks of a profession - a service ideal and a body of theoretical knowledge - it has been suggested that librarianship possesses the first, but not the second". This controversial issue, while somewhat central to one's perspective on the status of LIS research, is beyond the scope of this study. However we define LIS, research that provides

for a solid structure of theoretical and practical knowledge indubitably has a useful, and indeed crucial, place in supporting its development and progress.

In recognition of this fact, it is hoped this study will provide an enhanced understanding of the practical uses and limits of research-based knowledge, and will encourage academic researchers to view the problem from the perspective of practitioners' requirements. An increased appreciation of information professionals' research use and production should likewise encourage practitioners to exercise greater awareness of, and participation in, the utilisation and creation of applied LIS research. Information literacy is crucial to the personal professional development of all practitioners in the information sector. LIS would greatly benefit from a population of information professionals who are capable of critically analysing and evaluating research productions (McClure, 1989, p. 286), and applying relevant information gained from problem-solving research to operational processes (Powell, 1997, pp. 6-7). Library management directs an organisation to the successful achievement of its objectives, through four fundamental activities: planning, organising, leading, and controlling (Robbins et al., 2000). The process of decision-making underpins each of these functions, and is in turn underpinned by the need to collect, analyse, and integrate information emanating from research. Research can and should represent an effective decision-making tool used to determine the potential impact of a decision, and to assist with the identification, comparison, and evaluation of a set of alternatives, culminating in the selection of the most appropriate (Hernon, 1989, p. 9).

As Finnie, Frame and Stewart concluded from their 2000 evaluation of the level and quality of research conducted by practitioners in New Zealand libraries, "a higher profile for research is desirable" (Finnie, Frame and Stewart, 2000, p. 87). Hernon (1989, pp. 21-23) emphasises that previous research can offer good examples of practice and method, used to identify potential methodological problems, and to determine how best to conduct similar high quality research in one's own library environment. Improvements

to the profile of librarians and information workers would result from the documentation of their professional achievements, and such research endeavours facilitate reflection, evaluation and improvement[2]. Practitioners thus equipped are able to manage change and decision-making, critically evaluate the quality of research products, and commission and administer more effective and widely applicable in-house library research, ultimately improving service to clients. In Powell's words (1997, p. 8), "A library's involvement in research can improve staff morale and enhance the library's status in its community."

3.8 Summary

In summary, the literature conjures up a cycle of relationships. In generalised terms, LIS practitioners produce episodic, context-driven action research, while LIS academic researchers are mostly concerned with more generally applied research that might ultimately contribute to an underpinning theoretical framework. As suggested by Schön's "Reflection in Action" model, LIS practitioners rarely consult research findings because they are too esoteric and remote from the pragmatic necessities of everyday operational practice. Yet, action research is also frequently disregarded, as it is too locally-specific to be generally applied and of generic use.

These perceived trends were examined in this study from the viewpoint of LIS information professionals in New Zealand academic and non-profit government libraries and information centres, enabling an assessment of the current local situation regarding applied LIS research use.

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[2] For these thoughts, I am indebted to Jane Arlidge for her presentation at the Dunedin February 22, 2001 LIANZA meeting, entitled *Perspectives on Information Literacy*.

4 Research procedures

4.1 Research methodology

The study used a quantitative survey instrument that took the form of a self-administered mailed questionnaire (Appendix A), distributed to a purposive sample. This methodology was chosen due to the:

- problems of data interpretation noted by Cave (1991, p. 24) who used a qualitative approach to this topic, and the resultant desire to emulate Stewart's 1987 quantitative approach for purposes of controlled data analysis;
- fixed format of questionnaires, which eliminates variation in the questioning process and thereby promotes consistency;
- anonymity of self-administered questionnaires, which encourages candid answers useful for the accurate measurement of attitudes (though respondents who wanted a summary of research findings were asked to divulge their name and address);
- capacity for respondents to complete (within limits) the questionnaire in their own time and space, encouraging thoughtful and accurate answers (Powell, 1997, pp. 90-91);
- desirability of results that were generalisable across the population of information professionals employed in New Zealand academic and non-profit government libraries / information centres;
- ability to obtain an accurate and complete list of contact addresses and names from the November 2000 edition of the *New Zealand Contacts in Libraries* directory, for mail distribution purposes.

4.2 Population and sample

The *New Zealand Contacts in Libraries* directory lists 923 library and information centres segregated in the following table:

Table 1: Population size according to library / information centre type

Library / Info. Centre type	Population size
National	1
Public	281
Archives	28
Business / Private / Government	184
Health / Medical	46
Law	21
Theological	11
School	173
Tertiary	68
Museums	81
Photo	29
Total =	923

This study's purposive sample incorporates 130 institutions selected from the population cited above. Its focus on attitudes towards research compelled use of the following criterion:

- The library / information centre must be a non-profit institution organisationally situated in:

  - a government context (i.e. either funded by, or in some way affiliated with, a government department or ministry); or in a
  - tertiary context.

Such institutions provide information sources and assistance for the development of a knowledge base, to be used for research and learning and/or the formulation and implementation of governmental policy. Because their organisational objectives are inherently bound to issues of information use,

production and dissemination, qualified information professionals working in such institutions were chosen as key informants for this study.

This purposive sample was inspired by Cave, who deliberately selected New Zealand's seven university libraries and the DSIR library as part of his 1991 inquiry. His reasoning was that such libraries provide services and support to institutions with "a duty to undertake research, which it was presumed would extend far enough to influence attitudes among their library staffs" (Cave, 1991, p. 4).

The sample of this study thus professes to offer a best-case scenario of the current situation as perceived by information professionals in New Zealand. Any problems with research use and production identified in a sample that supports such research-oriented institutions should be recognised as carrying serious ramifications for the greater population (comprising information professionals from all types of New Zealand libraries and information centres). This research should consequently be construed as a preliminary exploration of the issue.

Accordingly, the following library / information centre categories were targeted for this study:

- National;
- Government (Department, Ministry, Parliamentary and Commission libraries);
- Health / Medical (with government funding / affiliation);
- Law (with government funding / affiliation);
- Tertiary (University, Polytechnic and College of Education libraries).

Private and public sector for-profit libraries were not selected for sample inclusion due to the distinct information and knowledge management needs of

for-profit organisations, despite the fact such organisations may have an explicit research focus (e.g. Crown Research Institutes – CRIs).

Those libraries / information centres that met the established criterion of government funding and/or affiliation were determined by the appearance of **.govt** in the domain name of that organisation's web site / email address. Thus, department, ministry, parliamentary and commission libraries, and city, regional and district council libraries were included in the sample, and prison libraries and resource centres that perform a role very similar to public libraries and are therefore not specifically research-oriented were deliberately excluded. This circumvented problems introduced by the broad, composite category of 'Business, Private and Government' library/information centres in the *New Zealand Contacts in Libraries* directory.

For-profit institutions, and non-profit non-government industries and professional associations were identified for sample exclusion by elements appearing in the domain name of those organisations, as outlined in the following table:

Table 2: Business / Private / Government domain names for sample exclusion

Domain names	Reason for sample exclusion	Exceptions
.co	Denotes private sector, usually for-profit	Government commissions (e.g. Human Rights Commission Library); and Government communications (e.g. Government Communications Security Bureau Library).
.com	Denotes private sector, usually for-profit	
.cri	Denotes for-profit Crown Research Institutes	
.gen		
.mil	Denotes military institutions	
.org	Denotes non-government industries, organisations, and professional associations	

Such selection criteria resulted in the following sample size to be used for this study, shown in Table 3 below:

Table 3: Population and sample sizes for this study

Library / Info. Centre type	Population size	Sample size
National	1	1
Business / Private / Government	184	55
Health / Medical	46	3
Law	21	3
Tertiary	68	68
Total =	320	130

The categories of Library / Information Centre type listed above in Table 3 are those used in the *New Zealand Contacts in Libraries* directory. Because they lack the mutual exclusivity that would make them useful for the purposes of this research, they have been collapsed into two categories for this study's sample, as follows (see Table 4):

Table 4: Library / Information Centre categories for this study

Library / Info. Centre type	Sample size
Government	62
Tertiary	68
Total =	130

All examples from the population that matched the criteria established for this study's sample were included in an attempt to strengthen the validity of the research. However, it is recognised that the imposition of such strictly defined criteria resulted in a largely homogeneous sample with high internal validity.

Library size was discarded as a criterion for sample selection. Small libraries (numbering 2 or less EFTS) were initially excluded from the sample on the

supposition that information professionals employed in such environments would not have the adequate resources to support:

- notable levels of research use or production;
- task specialisation (a variable chosen for examination in this study).

However, anecdotal evidence suggested that isolated and autonomous information professionals depend heavily on external research and it therefore seemed reasonable to expect that they had developed informed opinions as to its value in operational settings.

Furthermore, they are indicative of a distinctly New Zealand phenomenon whereby small-sized institutions (compared on a global scale) are supported by small information teams. Consequently, it was presumed that a purposive sample of large libraries / information centres could potentially effect false indications of the current New Zealand situation.

4.3 Instrumentation

The chief librarians / library managers from the institutions selected as this study's sample were identified using the *New Zealand Contacts in Libraries* directory. For each institutional entry in this directory, the most senior member of staff was selected. In cases where the staff hierarchy was not obvious, the first contact name listed was chosen. This person was posted a questionnaire (Appendix A), an information sheet (Appendix B), and a consent form (Appendix C) (all of which could be photocopied), with an invitation either to answer the questionnaire, or to distribute it to another information professional from that institution willing to participate in the study.

The information sheet provided contact details for the researcher and supervisor, and information about the research through a discussion of the project's objectives. The consent form ensured compliance with ethics stipulations.

The survey was undertaken during March 2001, to avoid tertiary holidays and exam periods. 130 questionnaires were mailed out on March 6 2001. All respondents were asked to complete the questionnaire and post it back to the researcher by 19 March 2001, due to time constraints on the project. The survey instrument (Appendix A) was straightforward and succinct. It included confined instances of "Other – please specify" options that invited unstructured individual responses to reveal additional issues not discussed by the researcher. Therefore, imposing a time deadline for returns was thought to be a reasonable request.

The questionnaire was presented on nine one-sided sheets of white A4 paper. Double-sided sheets were intentionally avoided so that participants would not inadvertently miss and fail to complete any questions. The layout was spacious to enhance comprehension and simplicity for the respondents. It included one instance of a question continuing from one page to the next, and a "[continued

over]" instruction was added to the bottom of the affected page to avoid confusion.

Given the scope and time frame of the research, focus was placed on practitioners' consultation of research, compared across the employee and education profiles of the respondents. This was because Cave's 1991 enquiry and the Dunedin Library Research Group's 2000 study both focused on the production of research by practitioners, and a counterbalance to this was desired. A comprehensive analysis of the employment and training background of information professionals and their subsequent attitudes to research was especially required, as no precedent for this in a New Zealand context had been identified in the literature.

The questions were deliberately ordered in such a way that respondents progressed from straightforward and factual indications of their individual employment and training profile, to analyses of their personal views and perceptions regarding their research use and production, and the relationship between research and practice.

Question 1 provided demographic data for the purposes of reporting the generalisability of the results. Components of Question 2 required the respondent's selection of one option from a small number of categories (so that respondents could scan the short lists quickly) to describe their individual employment and education profile. This enabled the collection of coded, quantifiable data, facilitating data analysis. 6-point Likert and Verbal Frequency scales were used in Questions 3 and 4 for the same reasons. "Other - please specify" options included in Questions 3 and 4 enabled respondents to discuss any issues, not covered by the survey instrument, in their own words.

4.4 Delimitations, limitations and assumptions

4.4.1 Delimitations

The factors discussed in this section affected the research and were controlled to an extent by the researcher.

The greater population of New Zealand library / information centres comprises disparate organisational contexts that are not homogeneous. A very large sample would consequently be required to ensure that results obtained from this survey have high external validity and are generalisable across the entire population. The sample criteria established as relevant to the objectives of this study, combined with time and resource constraints, dictated a small sample size of 130. Because the sample was purposive, all examples that met the established sample criteria were included, resulting in high internal validity. It must therefore be recognised that this purposive sample is not representative of all New Zealand library / information centre types.

The institutional entries listed in the *New Zealand Contacts in Libraries* directory were adopted for this research. It was noted that some tertiary libraries (e.g. University of Auckland Library) have separate listings for each of its branch libraries. Consequently, sixteen information professionals working at the University of Auckland Library were sent a questionnaire. By contrast, the University of Otago Library (comprising six branches) has only two listings in the directory with the result that only two information professionals from this institution were approached. The population of information professionals working in a New Zealand tertiary academic context was assumed homogeneous enough to ensure that research results were not unduly affected by such discrepancies.

Only qualified information professionals were selected for inclusion in the sample and the views of library technical / para-professional staff were not sought. Therefore, the perceptions of all library / information centre employees

from the institutions comprising the sample are not adequately represented; paraprofessionals and technical staff may respond very differently to the LIS research literature. However, in an attempt to construct a questionnaire that did not seem exclusive, the survey instrument gave respondents the option of indicating that they had yet to complete a library/information qualification. Returns from respondents who did not have a professional qualification were to be disregarded, as they did not match the requirements established for this study's purposive sample. Only one respondent indicated that they were yet to complete one professional qualification, having already completed another, and details relating only to their first qualification were included for data analysis.

The exploratory nature of this study meant that certain issues regarding LIS research were not examined, while other aspects were specifically analysed:

- the study focused on the reasons for and against the consultation of research by information professionals (Questions 3.2 and 3.3);
- respondents were asked to indicate how often they personally conduct research and encourage others in their employ to do so (Questions 3.4 and 3.5), but this study did not explore reasons for and against information professionals undertaking research;
- respondents were asked to specify their level of agreement with suggested strategies for improving the relationship between research and practice (Question 4), yet these responses were not compared with data obtained from other questions in the survey. As a preliminary exploration into the current situation in New Zealand, this question sought only to identify those strategies which practitioners feel should be assigned top priority;
- indications of research use (answers to Question 3.1) were compared with the respondents' professional (employment + education) profiles (answers to Questions 2.1 – 2.10) to assess the effect of certain participant variables on levels of research consultation;

- reasons for and against research consultation (answers to Questions 3.2 and 3.3) were not comparatively analysed against Questions 2.1 – 2.10 in this way;

- two factors suggested in Question 3.3 (as reasons why respondents do not consult research) were analysed in conjunction with responses to Questions 2.9 and 2.10 (indicating respondent participation in conferences / professional meetings), and one factor suggested in Question 3.2 (as a reason why respondents do consult research) to assess the extent to which Schön's model of Reflection-in-Action applies to the current situation in New Zealand libraries / information centres;

- problems connected with the effective dissemination of research findings by LIS researchers were not investigated, but practitioners' perceptions regarding the physical and intellectual availability of research were explored.

4.4.2 Limitations

The following issues were beyond the control of the researcher and may have affected the efficacy of data collection:

- the willingness of information professionals selected as part of the sample to participate;

- the accuracy with which respondents completed the questionnaire;

- the fact that data collection occurred at a busy time in the academic year (March), when tertiary libraries were facing increased workloads due to the influx of new students. Resultant demands for user education services may have impinged upon staff time;

- the decision of a chief librarian / library manager to distribute the questionnaire to an information professional in their organisation known to be interested in the topic, and willing to contribute their opinions. Such respondents may have been motivated by strong views that are not typical

of, nor generalisable to, the entire population, introducing unavoidable bias into the research results (Powell, 1997, p. 92).

Due to staff turnover and the dynamic demands placed on information professionals in the workplace, it should be noted that the research findings represent a snapshot of the situation that is not necessarily valid across time.

4.4.3 Assumptions

The following assumptions underpinned the methodology and survey instrument:

- respondents were able to articulate their perceptions regarding research accurately;
- the survey instrument was reliable, with validity that was internal;
- the purposive sample effectively represented one defined element of the entire population, which was assumed to offer a best-case scenario of the current situation in New Zealand libraries / information centres.

5 Data analysis and interpretation

5.1 Introduction

This component of the report includes a discussion of the:

- reduction of the sample;
- general treatment of the data;
- shortcomings in the survey instrument;
- sample's representativeness;
- potential for bias in the sampling methodology.

The sample's responses to the survey instrument are then examined in an attempt to answer each of the research objectives. Each research objective is stated, and the relevant research findings are tabulated, analysed, and discussed in order to formulate a response to the objective.

5.1.1 General treatment of data

Of the 130 questionnaires distributed, 64 useable returns were obtained. These were arranged into alphabetical order (by institution name), and a serial number was assigned to each institution for identification purposes.

All data used for analysis were located in the survey returns. Coded data were entered into a Microsoft Excel 97 spreadsheet to facilitate quantitative analyses.

Single-option selections and Likert and Verbal Frequency Scales were used in the survey instrument to produce data that could be analysed in a quantitative fashion to measure respondents' perceptions. Such data were subjected to descriptive statistical techniques, rather than inferential analyses. This research should consequently be construed as a preliminary exploration in which

associational relationships are investigated. Subsequent studies could derive hypotheses from these findings and subject them to more rigorous testing.

All missing values were coded as such and were uniformly ignored in the process of data analysis. Fortuitously, the number of missing values was small, and their impact on results was consequently regarded as marginal. They mostly occurred when respondents indicated in Question 3.1 that they never consult the research, and consequently made the valid decision to ignore Question 3.2, which asked why they consulted the research. One participant stated that they never consult the research, but denoted in Question 3.2 that s/he had carefully considered the reasons that might motivate him/her to consult research in the future. Thus, even though this respondent was a non- or potential-research consumer, his/her answers to Question 3.2 were included in the data analyses.

There was not one instance of a respondent repeatedly giving the same score for every Likert or Verbal Frequency scale question (in which case the survey return would have been deemed invalid and eliminated from the sample). This suggests that participants carefully read and contemplated each question before responding.

The acceptable rate of survey returns (discussed in section 5.1.4 of this report) suggests that the questionnaire was concise enough to encourage participation, and that its layout made it easy to complete. However, there were some shortcomings in the survey instrument, as discussed in the following section.

5.1.2 Shortcomings in the survey instrument

The following shortcomings in the survey instrument were noted, along with appropriate recommendations for its improvement.

Question 2.1 (which asked participants to specify their highest library / information qualification) generated some confusion. When the survey was

constructed, a postgraduate diploma / certificate was interpreted as a postgraduate degree. However, responses to this question indicated that the two are typically perceived as distinct qualification types, since a number of respondents added a self-assigned "Other – postgraduate diploma / certificate" category as their answer. All postgraduate diplomas and certificates were coded as postgraduate degrees in this study (in accord with the original intention). This highlighted a disadvantage of the methodology chosen for the survey instrument: mailed-out, self-administered questionnaires prevent the researcher from providing immediate feedback to interpretative queries from the respondent(s).

In response to Question 2.8, one participant astutely pointed out that tertiary libraries / information centres are government funded / affiliated institutions. Therefore, such categories are not mutually exclusive, and this could affect the reliability of results. To avoid this, the researcher compared categories assigned by the respondents with those assigned in the *New Zealand Contacts in Libraries* directory, whence the sample's institutions had originally come. This exercise demonstrated that the results obtained were reliable and that only this one respondent had found the question equivocal. However, it is acknowledged that the categories could be construed as ambiguous.

One respondent suggested that Questions 2.9 and 2.10 (asking participants to indicate how often they typically attend / present at conferences and professional meetings) could have helpfully included a time delimitation (e.g. "in the last 5 years, how often have you attended / presented...") to act as a point of reference. This would enable participants to answer these questions more easily.

In the event of participants indicating in Question 3.1 that they never consult the research, Question 3.2 (which examined reasons for research consultation) should have been filtered to prevent confusion (e.g. "if you do consult the

research, please refer to the reasons suggested below to indicate why…").
Similarly, in the event of participants indicating in Question 3.1 that they
regularly consult the research, Question 3.3 (which examined reasons for
respondents not consulting the research) should have likewise been filtered.

One respondent noted that the use of a double negative construction made
Question 3.3 unnecessarily perplexing. However, 'not consult' was deliberately
chosen as the terminology in preference to a more emotionally biased
expression such as 'disregard' or 'ignore', which may have affected the
responses.

Answers to Question 3.5 (which asked how often respondents encourage others
in their employ to conduct research) could have been filtered (e.g. "if there are
2 or more staff employed in your library / information centre…"). This is
because some New Zealand libraries / information centres incorporate sole
charge positions. Respondents from such institutions may have answered
"never" to this question, reflecting only the circumstantial context of their
workplace, and not their perception of the place of research production in
professional practice. The number of respondents to which this context applies
was unknown, but should be borne in mind during the interpretation of
responses to this question.

5.1.3 Representativeness of the sample

In order to assess the representativeness of the purposive sample, the
population of tertiary and non-profit government library / information centres
in New Zealand (as listed in the *New Zealand Contacts in Libraries* directory)
was compared with the numbers comprising the study's useable sample:

Table 5: Sample capture

	Tertiary	Government
Number in sample	36	28
Percentage of sample	56	44
Number in population	68	62
Percentage of population	52	48

Figure 1: Library / information centre type percentage of sample
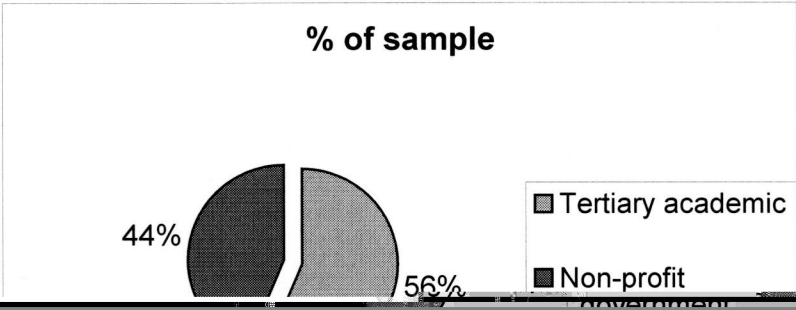
These figures indicate that:

- tertiary libraries / information centres were slightly over-represented by 4%; and
- government libraries / information centres were slightly under-represented by 4% in this study's sample.

5.1.4 Potential for bias in the sampling methodology

Only those libraries / information centres known to meet a restricted set of criteria were included in the sample of this study (see section 4.2 of this report). From these institutions, only survey responses from qualified information professionals were analysed. This research was therefore highly susceptible to sampling bias, and while the sample size was robust (N=64), its non-random, purposive nature did not enable the researcher to make accurate inferences about the characteristics of the greater populations of:

- all New Zealand libraries / information centres;
- all professional and para-professional practitioners in New Zealand libraries / information centres.

There was also the potential for non-response bias in the sampling method since the reliability of the data is dependent on the number of responses obtained. An assessment of the generalisability of results was assisted through the calculation of the response rate, as follows:

$$\frac{\text{Number of questionnaires returned}}{\text{Number of questionnaires distributed}} \times 100$$

This gives a response rate of **49%**.

This was deemed a reasonable response rate for a self-administered, mailed-out questionnaire that had a short return deadline imposed on it by the researcher, with no reminders or follow-ups. This figure indicates that the information professionals comprising the study's sample regard research in their field of professional activity as important. The number of respondents interested in a summary report of the research findings (N=24; 37.5% of the sample) lends support to this observation.

The response rate is not perceived as affecting the generalisability of the findings to the population under consideration, however the sampling bias does considerably compromise the generalisability of findings to the greater population, as the research has high internal validity. As a result, this study should be construed as a preliminary exploration of the issue.

5.2 Data analysis and interpretation for objective 1

Objective 1: To collect demographic information relating to the gender and age of participants, for the purposes of affirming the generalisability of the sample.

5.2.1 Gender and age distribution data analysis

The data used were responses to Questions 1.1 and 1.2, which asked respondents to indicate their gender and age group.

Table 6: Gender distribution of the sample

Gender	Number in sample	Percentage of sample
Male	16	25
Female	48	75
Total =	64	100

Table 7: Age distribution of the sample

Age	Number in sample	Percentage of sample
25 or under	0	0
26-35	8	13
36-45	20	31
46-55	29	45
56 and above	7	11
Total =	64	100

Figure 3: Percentage proportions of age groups
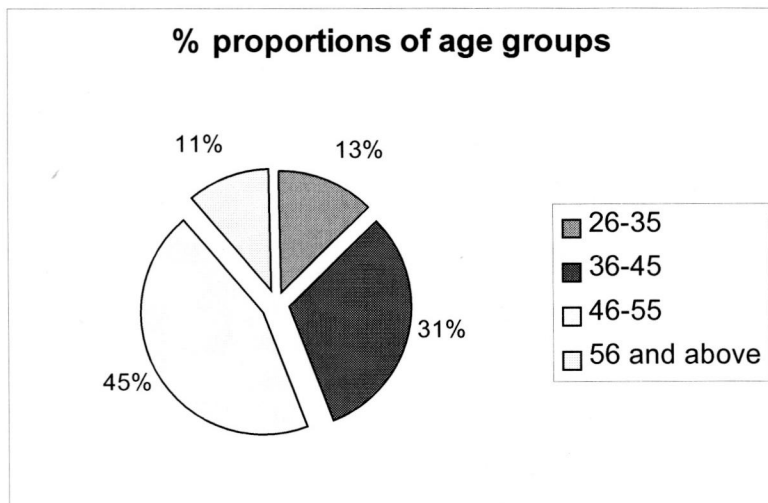
5.2.2 Gender and age distribution data interpretation

The results for gender distribution were anticipated: it is widely recognised that LIS is a field in which females predominate. The *LIANZA 2000 Salary Survey*, for example, found that 11% of its respondents were male, and 89% were female. LIANZA had surveyed both professional and para-professional library staff, and results in the present study may reflect a greater proportion of male information professionals in senior positions.

Because the questionnaire was dispatched to the most senior member of staff from each institution in the sample, it was unsurprising that no respondents were aged 25 or under, and that most respondents (76%) fell into the '36 – 55 years' categories. Positions such as chief librarian or library manager require more professional experience and training than could be reasonably expected of someone aged 25 or less.

These results affirm the generalisability of the sample.

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5.3 Data analysis and interpretation for objective 2

> **Objective 2:** To determine the perceptions of information professionals concerning their use of LIS research:
>
> **Subquestion 1:** How often do information professionals consult the research?
> **Subquestion 2:** Why do information professionals consult the research?
> **Subquestion 3:** Why do information professionals **not** consult the research?

The data used were responses to Questions 3.1 - 3.3 (segregated for the purpose of analysis into subquestions 1-3 above). As a measure of central tendency, the mean was calculated, enabling generalisations to be made; as a measure of dispersion, the standard deviation was calculated, enabling assessments of the uniformity or diversity of respondents' perceptions. The percentage of the sample that responded to each subquestion was also recorded.

5.3.1 Data analysis for subquestion 1

When respondents were asked in Question 3.1 to indicate how often they consult the LIS research, the mean response from the 62 responses to this question was 3.11 and the standard deviation was 1.47.

5.3.2 Data analysis for subquestions 2 and 3

The data used were responses to:

- Question 3.2 (for subquestion 2), which asked respondents to indicate why they consult the research; and
- Question 3.3 (for subquestion 3), which asked respondents to indicate why they do not consult the research.

The mean and standard deviation were calculated for each reason suggested in the survey instrument, and the percentage of the sample that responded to each

reason was also noted. The reasons were ranked in descending order of mean score. Only the mean scores were used as a single indicator of the level of agreement to each reason, facilitating comparison among the suggested reasons (Alreck and Settle, pp. 374-5).

Table 8:
Ranked reasons for consulting the research (objective 2, subquestion 2)
[Range = 1-6]

Rank	Reason*	Mean	SD	% response
1	To stay current with developments / trends	3.79	1.45	89
2	To assist with managerial activities	3.77	1.44	89
3	To provide info. for self-motivated research	2.54	1.53	88

Table 9:
Ranked reasons for not consulting the research (objective 2, subquestion 3)
[Range = 1-6]

Rank	Reason*	Mean	SD	% response
1	Time constraints	4.07	1.67	94
2	Professional networking is sufficient	3.70	1.39	94
3	Practical workplace problems not addressed	3.13	1.40	86
4	Problems with physical availability	2.84	1.53	91
5	Presentation is difficult to understand / apply	2.61	1.19	89
6	Problems with intellectual availability	2.34	1.22	83

* The reasons are given in summary form in this report. The full form of each reason is available in the questionnaire (Appendix A)

5.3.3 Interpretation

High percentage response rates (83% and above) mean that the data can be confidently generalised to the study's sample. The percentage of the sample answering Question 3.2 (subquestion 2) was lower than most percentages noted elsewhere. This was because some participants stated that they "never" consulted the research in Question 3.1 (by circling '1'), and therefore quite validly had no responses to offer for Question 3.2 (which examined their reasons for research consultation).

The standard deviation scores obtained for reasons why participants consult the research (SD range = 1.44 – 1.53), and their level of research consultation (SD = 1.47), were remarkably similar. This suggests the diversity of opinion regarding these questions was consistent, and the results could therefore be cautiously interpreted as resembling a consensus view.

The overall mean for research use (3.11) by information professionals was low, as expected from repeated assertions of the fact in the literature on this topic. The Likert Scale used for this question had a range from 1 to 6, and therefore a measurement below the median of 3.5 indicates relatively low levels of research use. This is echoed in the sentiments of one respondent, who noted that s/he had "yet to face a problem that I thought research could help me with."

The mean scores for those reasons why respondents consult the research displayed a weighting towards research consultation that supports workplace operational activities such as decision-making, problem-solving, planning and evaluation (3.77), and professional awareness of developments and trends in the field of LIS (3.79). Garnering information for the purposes of self-motivated research earned a much lower mean score (2.54) as a factor prompting research consultation. This may be because the results of self-motivated projects are not as directly applicable to the workplace context, and so encouragement and support from the organisation for such pursuits may defer to more pressing workplace priorities.

In reference to the ranked reasons for not consulting the research, it is noteworthy that the two lowest ranking mean scores ('presentation is difficult to understand / apply' and 'problems with intellectual availability') have the lowest standard deviation measures (1.19 and 1.22 respectively). This suggests that there is uniformity of opinion among participants regarding those reasons perceived to have the most limited influence on their decision not to consult research. There is, however, more divergence of opinion further up the

rankings with 'time constraints' (SD = 1.67) producing the widest variance in responses. The high mean score for this reason (4.07) suggests that demands on respondents' time regularly affect their capacity to consult the research.

Of the reasons suggested for information professionals not consulting the research, problems with research content ('practical workplace problems not addressed'; mean = 3.13) were perceived as having a greater impact than problems of research presentation and dissemination. The physical availability of research (mean = 2.84), its intellectual availability (mean = 2.34), and the way in which it is presented (with consequences for its ability to be effectively understood and applied) (mean = 2.61), had lower mean scores.

Responses to the "Other – please specify" category for Question 3.2 (reasons for research consultation) were infrequent and disparate, and these were not analysed.

In response to Question 3.3 (reasons for not consulting the research), one respondent noted the following:

> Improved staffing levels would facilitate the undertaking of practice-based research and more frequent application of research results in the workplace – minimal staffing tends to discourage this.

Such resource constraints are frequently discussed in the literature as a barrier to research production (e.g. Finnie, Frame and Stewart, 2000). From this comment, it transpires that the same factor is perceived as a workplace obstruction to the use and application of research results. Another respondent likewise mentioned deficient 'manpower' as a contributing factor to minimal levels of research consultation, as well as the lack of a 'research environment in the organisation'. The effects of organisational culture on research pursuits (use and production) were not examined in this study, but would make a worthy topic for future investigations.

5.4 Data analysis and interpretation for objective 3

Objective 3: To determine the perceptions of information professionals concerning their production of research:

Subquestion 1: How often do information professionals undertake research?
Subquestion 2: How often do information professionals encourage others in their employ to conduct research?

5.4.1 Data analysis for subquestions 1 and 2

When respondents were asked in Question 3.4 (for subquestion 1) to specify how often they have conducted research related to their employment in the information sector, the mean response from the 63 responses to this question was 2.79 and the standard deviation was 1.54.

Question 3.5 (for subquestion 2) asked respondents to indicate how often they have encouraged others in their employ to conduct research. The mean response to this question from the 61 responses obtained was 2.43 and the standard deviation was 1.55.

5.4.2 Interpretation

High percentage response rates to both subquestions relating to this research objective mean that the data can be confidently generalised to the study's sample.

The interpretation of Question 3.5 (subquestion 2) should take into account the fact that a group of libraries / information centres in New Zealand have very small staff numbers, and in some cases sole charge positions exist. Therefore, some respondents may have answered "never" to this question as a reflection of the circumstantial context of their workplace rather than as an indication of their attitude to the place of research in professional practice. The number of

respondents to which this context applies was unknown, but should be considered during the interpretation of responses, as the low mean score obtained for this question (2.43) could be misleading.

The mean and standard deviation scores for both subquestions are very similar. The mean scores for both 'research production' and 'encouragement for research production' are low at 2.79 and 2.43 (from a Likert scale range of 1-6) respectively. Such results were expected, and mirror conclusions regarding low levels of research production by LIS practitioners noted in a New Zealand context by Cave (1991) and Finnie, Frame and Stewart (2000). In comparison with the mean score for Question 3.1 ('amount of research consultation', as discussed in section 5.3.3 of this report), the results for this research objective imply that information professionals consult the research more often than they themselves conduct it, or encourage others in their employ to undertake it.

Finnie, Frame and Stewart examined obstacles to research production by library practitioners in their 2000 study, and identified lack of time, lack of staffing, and lack of adequate funding as the three top-scoring barriers (in that order) (Finnie, Frame and Stewart, 2000, p. 86). A respondent to this study substantiated these findings, commenting on the lack of "proper funding for research projects" and suggesting that government direction is needed to increase financial investment in LIS research endeavours. This respondent also recommended "research related to the organization's need". Such observations link back to the effects of organisational culture on research pursuits (use and production), identified in response to objective 2 (section 5.3.3 above) of this study. It appears that the allocation of each of these essential resources (time, staff and money) for research production is connected to the potential value of the research to the organisation. As one respondent noted,

> Research is a luxury in a busy library.... And, fundamentally, we are not paid to do it unless it is specifically directed to a practical outcome in the working environment, by which I mean our employers will not fund us to work on things not directly relevant to our own workplace.

Such workplace-related research could take many forms. One respondent gave the following example of research they had undertaken,

> Compilation and analysis of statistics for my annual report, and a survey of users to determine demand for extending opening hours.

Any research that is generated with little direct relevance to operational concerns is not consulted as often, as noted in Question 3.3 where respondents indicated that the inability of research to address practical workplace problems was the third top-scoring reason for them not consulting the research (see section 5.3.2 above). One respondent offered the following opinion regarding motivational factors behind research production, and the generation of research that is not applicable to operational issues,

> The main problem with LIS research as I see it is that it is wrongly motivated and people aren't doing research because they have a problem they want to solve – they're looking for subjects to research because they feel they ought to be doing research in order to look professional – it's a symptom of the profession's insecurity.

5.5 Data analysis and interpretation for objective 4

Objective 4: To assess the effect of certain participant variables on the use of research by information professionals, including:

Subquestion 1: Highest library / information qualification, and whether it contained a research (methods or project) component.
Subquestion 2: Date of completion of highest library / information qualification.
Subquestion 3: Major subject area (other than library / information studies) of tertiary-level study.
Subquestion 4: Experience, indicated by number of years/months in current position.
Subquestion 5: Level of management responsibility.
Subquestion 6: Speciality area of responsibility.
Subquestion 7: Library / information centre size, indicated by number of EFTS professional and para-professional staff.
Subquestion 8: Organisational context of the library / information centre.
Subquestion 9: Level of participation in conferences and professional meetings.

The data used were responses to Question 3.1 (amount of research use) and Questions 2.1 – 2.10, which deduced categories for each participant for the variables listed above as subquestions 1-9. The percentage of the responses represented by each category in subquestions 1-9 was also noted.

5.5.1 Data analyses and interpretations for subquestions 1 and 2

Data were taken from Question 2.1 of the survey instrument. The mean research use scores for the 'type of library / information qualification' categories were as follows:

Table 10: Mean research use for 'type of library / information qualification' (objective 4, subquestion 1)

Type of library / info. qualification	Mean research use	% of responses
Postgraduate degree, diploma, certificate	3.19	62
Bachelors degree	2.00	2
Non-graduate diploma, certificate	2.91	36

The mean research use scores for the 'research (methods or project) component in library / information qualification' categories were as follows:

Table 11: Mean research use for 'research component in library / information qualification' (objective 4, subquestion 1)

Research component	Mean research use	% of responses
Yes	3.19	40
No	2.97	60

Using data taken from Question 2.2 of the survey instrument, the mean research use scores for the 'date of completion of highest library / information qualification' categories were calculated as follows:

Table 12: Mean research use for 'date of completion of library / information qualification' (objective 4, subquestion 2)

Date of completion	Mean research use	% of responses
Pre-1975	3.42	20
1975 - 1980	3.17	19
1981 - 1985	2.63	13
1986 - 1990	3.50	13
1991 - 1995	3.50	13
1996 – current student	2.38	22

Table 13: Collapsed mean research use for 'date of completion of library / information qualification' (objective 4, subquestion 2)

Date of completion	Mean research use	% of responses
1995 and before	3.25	78
1996 – current student	2.38	22

Only 2% of respondents specified a bachelors degree as their highest library / information qualification, which is too small a data set for this category's results to be meaningful.

Otherwise, results to this question were anticipated. The 'Postgraduate degree / diploma / certificate' category (accounting for 62% of respondents) had a considerably higher mean score for research use (3.19) than the mean score indicated by respondents in the 'Non-graduate diploma / certificate' category (2.91). The supposition that postgraduate qualifications typically involve higher levels of research use and more rigorous attention to research skills when compared with non-graduate qualifications may explain these results. Assuming that postgraduate courses of study more often contain a research methods or project component (when compared with non-graduate courses), this suggestion is somewhat supported by the results obtained for subquestion 2, which show that those participants who undertook a research component in their highest LIS qualification have a greater mean score for research use (3.19) than those whose course of study did not contain a research component (2.97).

It would therefore appear that the nature of the respondent's highest library / information qualification *does* have some effect on their subsequent amount of research consultation. The trend displayed in these results implies that the higher the LIS qualification of a respondent, the higher his/her amounts of research use.

Answers to subquestion 2 were collapsed from six categories to two in an attempt to alleviate the potentially misleading results of small data sets, and to enable the comparison of results from respondents who have graduated recently, with those from respondents who have held senior library positions for longer amounts of time. 1996 was chosen as the category boundary because this was the year in which compulsory 'Research Methods' and 'Research Project' components were introduced to the Victoria University of Wellington's MLIS degree. However, there is no way of knowing whether respondents who graduated in 1996 or more recently undertook the New Zealand MLIS programme, or a diploma / certificate that may or may not have contained compulsory research components.

This comparison revealed that those respondents who graduated with their highest LIS qualification most recently had a considerably lower mean score for research use (2.38) than those respondents who graduated in 1995 or before (3.25). Stewart likewise noted a relatively disappointing performance in research awareness by recently qualified information professionals, despite the fact that "studying at library schools does give opportunities for reading widely in library literature – the like of which are rarely found again in professional life" (Stewart, 1987, p. 61). The results obtained here prompted the following speculations, all of which could be investigated in future research on this topic:

- after immersion in scholarly pursuits at library school, recent graduates may exhibit a tendency to detach themselves from academic activities such as research consultation in their first few years of professional practice;
- as an information professional's amount of practical experience increases,

research consultation is required in increasing amounts;

- more senior management positions such as those filled by experienced information professionals demand greater use of research (discussed also in sections 5.5.3 and 5.5.4 of this report).

It should be noted that only 14 of the 63 respondents (22%) to this question completed their highest library / information qualification in 1996 or more recently. This is most likely due to the sampling method: the questionnaire was sent to the most senior member of staff from each institution in the sample, and the likelihood of recent graduates occupying positions such as chief librarian or library manager is understandably low. Therefore, the results from such a graduation-date comparison must be considered with due caution.

One respondent indicated that their qualification did not include "a research component unless you count the compilation of an extensive bibliography". New Zealand's MLIS course does give students the option of preparing a bibliography for their Research Project compulsory course component. According to this precedent, this respondent's bibliography was coded as a research component for data analysis.

5.5.2 Data analysis and interpretation for subquestion 3

Data were taken from Question 2.3 of the survey instrument. The mean research use scores for the 'major subject area of tertiary level study' categories were as follows:

Table 14: Mean research use for 'major subject area of tertiary level study' (objective 4, subquestion 3)

Major subject area	Mean research use	% of responses
Social sciences	4.38	13.5
Humanities	3.06	64
Commerce / business	2.80	9
Sciences	2.75	13.5

For the purposes of this study (and using only responses to the survey instrument), 'Social sciences' includes geography, anthropology, political science and psychology; 'Humanities' includes history, education, arts, philosophy, literature, english, classics, and music; and 'Sciences' includes mathematics, physics, natural sciences, applied science, dentistry and nursing.

Information professionals who majored in the social sciences displayed a much higher mean score (4.38) for research use than those respondents from the other subject areas. This may reflect the fact that LIS is itself a social science, and prior training in, and familiarity with, the research requirements peculiar to this discipline may best equip LIS practitioners with the appropriate skills and aptitude for subsequent research use in their professional life.

A large proportion (64%) of responses to this question came from information professionals whose major area of study other than library / information management was the humanities. The mean score for research use by humanities-graduates was 3.06. This is notably higher than the mean scores for commerce / business graduates (2.80) and science graduates (2.75).

While there would consequently appear to be some association between study

of the social sciences and humanities and subsequent higher levels of LIS research use, the data sets for all categories of this subquestion (except humanities) are quite small. As such, the results do not allow the researcher to make confident inferences as to the effect of 'major subject area of tertiary level study' on participants' attitudes to LIS research.

5.5.3 Data analysis and interpretation for subquestion 4

Data were taken from Question 2.4 of the survey instrument. The number of responses to this question were too scattered, and consequently the data sets for each category were too low for the results to be confidently interpreted. Therefore, the categories were collapsed from six to two, facilitating an almost equal division in the numbers of responses to each category of this subquestion. The mean research use scores for the 'experience in current position' categories were as follows:

Table 15: Mean research use for 'experience in current position' (objective 4, subquestion 4)

Experience in current position	Mean research use	% of responses
5 years or less	2.84	52
More than 5 years	3.40	48

Over three-quarters (75.5%) of responses to this question came from participants who had held their current position for more than 2 years. This suggests that information professionals tend to remain in senior posts for notable lengths of time, and staff turnover at this level is not high. (From the sampling method employed for this survey – see section 4.2 of this report – it was assumed that most respondents occupy senior management positions within their library / information centre.)

Those respondents who had held their current position for more than 5 years had a higher mean score (3.40) for research use than those who had held their current position for 5 years or less (2.84). This suggests that the amount of

research consultation by information professionals increases with the number of years of experience they have at a senior level.

5.5.4 Data analysis and interpretation for subquestion 5

Data were taken from Question 2.5 of the survey instrument. The mean research use scores for the 'level of management responsibility' categories were as follows:

Table 16: Mean research use for 'level of management responsibility' (objective 4, subquestion 5)

Level of responsibility	Mean research use	% of responses
Chief librarian	3.03	58
Library manager	3.23	42

The percentages of responses to this question show that slightly more respondents were chief librarians (58%). Library mangers accounted for 42% of respondents. Thus, both categories were very adequately represented.

Stewart's 1987 study findings suggest that the higher a respondent's managerial level within an organisational hierarchy, the greater their awareness of, and familiarity with, LIS research, and the more likely they are to apply research results to their organisational setting. It was expected that a similar associational relationship would be apparent in this study. However, the difference in mean scores for research use by each category is minimal, with a range of only .20. Thus, these results do not portray a relationship between varying levels of management responsibility and amounts of research use.

This may be due to the sample methodology employed here (see section 4.2), which procured a useable sample comprising information professionals in senior management positions. Such a sample might have been too

homogeneous for the adequate identification of the effects on research use, arising from the variable 'level of management responsibility'. To enable the more accurate assessment of effects of respondent position within a staff hierarchy on levels of research use, the sample could have included para-professional, as well as professional library staff, thereby ensuring it represents an entire staff hierarchy, and not simply the highest strata thereof.

5.5.5 Data analysis and interpretation for subquestion 6

Data were taken from Question 2.6 of the survey instrument. The mean research use scores for the 'specialty area of responsibility' categories were as follows:

Table 17: Mean research use for 'specialty area of responsibility' (objective 4, subquestion 6)

Specialty area of responsibility	Mean research use	% of responses
Management / administration	3.37	56.5
Distance learning / remote user services	2.00	2
Reference / research	2.70	16
User education / information literacy	2.50	3
Knowledge management	3.50	3
Specialty area of responsibility includes elements of some/all areas	2.55	17.5
Policy and strategic development	6.00	2

The sampling method was very much responsible for the results here. Since the most senior member of staff from each institution in the sample was selected as the contact name to whom the research questionnaire was sent, by far the largest percentage of responses to this question (56.5%) came from participants whose specialty area of responsibility is "Management / administration".

To obtain more representative – and thus, generalisable – results to this question, the chief librarians / library managers to whom the questionnaire was distributed could have been explicitly asked to circulate it to a qualified

information professional in their institution. The small size of the data sets for the categories listed in the table above necessitates somewhat selective interpretation of the results. The only categories that attracted large numbers of responses were "Management / administration", "Reference / research", and "Specialty area of responsibility includes elements of some/all areas", and these categories will form the basis of the discussion that follows. However, the high means for research use scored by those participants specializing in "Knowledge management" (3.50) and "Policy and strategic development" (6.00) deserve comment, despite the fact the number of responses for these categories was very small (3% and 2% respectively). These scores are perhaps explained by the fact that such areas of professional activity are fundamentally involved with the research paradigm.

Of note is the observation that those respondents who specialise in "Management / administration" recorded a considerably higher mean score (3.37) for research use than the other two categories under examination (2.70 for "Reference / research" and 2.55 for "Specialty area of responsibility includes elements of some/all areas"). This may reflect the fact that library staff in senior management positions are responsible for decision-making, evaluation, problem solving and planning. Such managerial functions demand, and are effectively assisted by, recourse to the literature. However, one would reasonably expect respondents who specialise in "Reference / research" to have innate familiarity with research productions across numerous disciplines, as well as an understanding on their clients' behalves of the availability, use, and applicability of different research types. Their collective low level of LIS research consultation is perhaps a little disconcerting in light of their specialty skills in this area.

5.5.6 Data analysis and interpretation for subquestion 7

The data were obtained from Question 2.7 of the survey instrument. The size of the data sets resulting from the use of eight separate categories for this question prevented meaningful interpretation of the data. Therefore, the categories were collapsed to reflect library / information centre sizes that may loosely be termed small (5 EFTS or less), medium/large (6 – 80) or very large (81 or more). The fact that no respondents to the survey were employed in institutions with 61 – 80 EFTS prompted the decision to categorise '81 or more' as "very large" institutions. It is acknowledged that these divisions of size were somewhat arbitrarily decided. The mean research use scores for the 'library / information centre size' categories, indicated by numbers of EFTS, were calculated as follows:

Table 18: Mean research use for 'library / information centre size' (objective 4, subquestion 7)

Library / information centre size	Mean research use	% of responses
5 or less	2.69	56.5
6 – 80	3.35	27.5
81 or more	4.20	16

The data imply that tertiary and non-profit government libraries / information centres in New Zealand are mostly small, comprising 5 or less EFTS (56.5% of responses to this question fit into this category). The second highest represented category was 6 – 20 EFTS, with 22.5% of responses.

The largest libraries / information centres in this study's sample (from the '121 or more EFTS' category) scored the notably high mean for research use of 5.25, which is close to the maximum score of 6. However, the data set is very small, with just 6.5% of the question's respondents falling into this category. The collapsed category results portray much the same trend, however, with the largest institutions scoring a high mean for research use (4.20), and the smallest

institutions scoring considerably lower (2.69). The mean score for research use by respondents employed in medium/large institutions falls neatly in the middle (3.35).

Such results strongly suggest that research use increases as the size of a library/information centre increases. This may be due to extra funding provisions available to larger institutions. Alternatively, it may reflect information professionals employed in very small teams undertaking task diversification on a scale that impinges severely on their time, and prevents them gaining enough familiarity with specialised sectors of professional activity to necessitate research consultation in those areas. The results from subquestion 6 (section 5.5.5 of this report) seem to lend support to this observation: respondents who assumed responsibility for a diverse number of specialty areas had a lower mean score for research use compared with respondents whose workplace activities involved clear task specialisation.

5.5.7 Data analysis and interpretation for subquestion 8

The data were obtained from Question 2.8 of the survey instrument. The mean research use for respondents from tertiary libraries / information centres was 3.51. Respondents from a government organisational context scored a mean research use of 2.59.

In light of the scholarly environment in which tertiary information professionals perform their duties, the high mean (3.51) for research use scored by respondents from this organisational context is not surprising. The academic community has an obligation to conduct research, and such necessary preponderance towards research endeavours might favourably influence the library staff of such institutions regarding their attitudes towards research, as presumed by Cave (1991, p. 4).

Respondents from non-profit government libraries / information centres displayed a comparatively low mean score for research use (2.59; 0.92 less than the score for academic libraries). The sampling method employed in this study (section 4.2) was based on the assumption that government libraries / information centres provide resources to assist with the formulation and implementation of governmental policy, and it is reasonable to expect that the staff of such information centres consult and evaluate research sources as part of their support service. If these assumptions are valid, it appears that the use and provision of research findings for clients does not necessarily result in increased research consultation in the information practitioner's own professional field. This phenomenon was also noted with those respondents whose specialty area of responsibility is research and reference (subquestion 6, section 5.5.5 of this report).

5.5.8 Data analysis and interpretation for subquestion 9

The data were obtained from Questions 2.9 and 2.10 of the survey instrument. The small data sets made interpretation difficult, and the categories were collapsed for both questions in an attempt to reveal any trends. The categories were clustered into two (as opposed to five) in order to obtain data sets with as close to 50% of responses as possible. The mean research use scores for the 'conference attendance' and 'conference participation' categories were calculated as follows:

Table 19: Mean research use for 'conference attendance' (objective 4, subquestion 9)

Conference attendance	Mean research use	% of responses
Once a year or less (including never)	2.93	47
Twice a year or more	3.27	53

Table 20: Mean research use for 'conference presentation' (objective 4, subquestion 9)

Conference attendance	Mean research use	% of response

meetings 'more than three times a year'. This is a robust element from the sample, and could therefore be construed as representative.

Collapsed categories for conference / professional meeting presentation showed an even greater difference in the mean scores for research use (1.08 difference between the two categories cf. 0.34 for attendance). This suggests that information professionals who present at such professional forums (even only once) have a considerably higher tendency towards research use (3.77) than the mean research use of information professionals who have not yet presented in this context (2.69). This trend was also implied from the pre-collapsed categories, where those respondents who typically present papers/seminars 'twice a year' (the highest level recorded in this survey) displayed a mean research score that was much larger (4.50) than that for any other category. However, only 6.5% of responses to this question fell into this category, so this result cannot be confidently interpreted as representative.

The trends revealed in the answers to these questions were expected. Stewart discovered in her 1987 study that research awareness was often inspired by conference / professional meeting participation: respondents indicated that they first learned about three of the six research projects chosen as reference points for Stewart's survey through conferences, meetings or conversations with colleagues. In Stewart's words (1987, p. 64),

> ...the more active participants in professional activities and attendance
> at conferences and meetings are more likely to be aware of research.
> This certainly is as it should be if time spent at meetings, conferences
> and so on is to be justified.

However, Stewart did not ask her study's respondents to classify their conference / professional meeting attendance as passive participation (i.e. attendance) or active participation (i.e. presentation). From the results obtained in this study, it appears that presentation has a greater impact on tendencies towards research consultation than attendance. This is not surprising; much

research activity is surely obligatory for anyone composing a paper or seminar for presentation at a professional forum.

5.6 Data analysis and interpretation for objective 5

Objective 5: To determine the extent to which Schön's "Reflection-in-Action" model applies to the current situation in New Zealand libraries / information centres.

The data used were responses to Question 3.1 (amount of research use) of the survey instrument; Questions 2.9 and 2.10 (respondents' indications of attendance and presentation participation at conferences / professional meetings); responses to one statement suggested in Question 3.2 as a reason why respondents do consult the research; and answers to two statements postulated in Question 3.3 as reasons why respondents do not consult the research.

Schön's Reflection-in-Action model maintains that practitioners learn as they practice, and continually face dynamic situations that are characterised by their complexity, uncertainty, instability, uniqueness and value conflicts, and are neither clearly defined nor static (Schön, 1983, p. 14). Schön asserts that practice-based reflective knowledge is used in response to such workplace problems, and is communicated amongst practitioners through descriptive reporting, conferences, association-meetings, and conversations that are difficult to capture and commit to written, published form (Schön, 1987). This would suggest that there is reduced impetus for information professionals to consult formal, published research when addressing dynamic, pragmatic workplace concerns.

The results for Question 3.3 (objective 2, subquestion 3) seem to uphold Schön's argument. While 'time constraints' was the top-scoring factor in respondents' reasons for not consulting the research (with a high mean score of

4.07), the following factors for 'not consulting the research' ranked second and third:

- conferences, meetings, and professional networking provide sufficient knowledge sharing opportunities with colleagues and researchers (mean score = 3.70);
- the research does not address practical problems in the workplace (mean score = 3.13).

These findings were summarised by one respondent who made the following salient point,

> Unless the research is practice based and able to be directly applied in the work environment, [it] will remain an academic exercise of little value.

Another participant echoed these sentiments, stating that "Personal / professional networking provides the most effective information." Email listservs, "Special Library and Information Studies" gatherings and *Library Life* (the publication of New Zealand's professional association - LIANZA: *Library and Information Association of New Zealand Aotearoa*) were specific examples of such intra-colleague communication, as noted by one respondent. Another respondent supported the notion that such professional knowledge sharing is best suited to situations that are dynamic and rapidly evolving, with the following words,

> My library has been in a phase of establishment and rapid expansion...I tend to follow precedents of best practice in similar libraries...and make direct personal enquiries to expert colleagues when I feel I need to seek advice

One would reasonably expect in light of these observations that the more respondents perceived 'conferences / meetings / professional networking

provide sufficient knowledge sharing opportunities' as a reason for not using research, then their consultation of research findings would correspondingly decrease. The mean research use scores for the 'conferences provide sufficient knowledge sharing opportunities' categories (from 1 to 6) were analysed as follows, and the percentage of the sample that responded to each category was also recorded.

Table 21: Mean research use for 'conferences provide sufficient knowledge sharing opportunities' (objective 5)
[Range = 1-6]

Conferences provide sufficient knowledge sharing opportunities	Mean research use	% of responses
1 (Never a reason)	4.50	7
2	4.33	10
3	3.25	27.5
4	3.00	20.5
5	2.33	26
6 (Regularly a reason)	2.00	9

These results uphold this supposition, with the mean scores for research use steadily decreasing the more 'conferences provide sufficient knowledge sharing opportunities' is seen as a notable reason for not consulting the research. The mean research score for '6 - regularly a reason' is considerably lower (2.00) than the mean research score for '1 - never a reason' (4.50).

However, answers to Questions 2.9 and 2.10 (discussed in section 5.5.8 above) suggest that the more respondents participate in (either attend or present at) conferences / professional meetings, the more their level of research consultation increases. This observation is not as anomalous as it might initially appear. Results obtained here, and comments from respondents cited above, lend support to Schön's argument that practitioners seeking to address dynamic workplace problems prefer information exchanged via professional networking over published, formal research findings. Nevertheless, there are other factors that motivate information professionals to consult the research. These include

the composition of a paper or seminar intended for presentation at a professional forum: published, formal research literature is quite appropriate to such requirements. Such an assumption seems to be supported by the mean scores accorded by the different categories of 'frequency of conference presentation' to the following reason for research consultation:

- to provide information when conducting self-motivated research not necessarily intended to solve problems specific to my workplace.

These results are summarised in Table 22 that follows. The percentage of responses for each 'frequency of conference presentation' category was also recorded.

Table 22: Mean score for 'consult research to provide information for self-motivated research' according to category of 'frequency of conference presentation'
[Range = 1-6]

Frequency of conference presentation	Mean score for 'consult research for self-motivated research'	% of responses
Not once to date	2.31	58
Once a year or less	2.22	33
Twice a year	4.60	9

The mean score assigned to this particular impetus for research consultation is much higher (4.60) for those respondents who typically present papers / seminars at conferences / professional meetings 'twice a year' than it is for categories where the frequency of conference presentation is lower. However, it should be noted that a very small percentage of responses to this question align with the 'twice a year' category for 'frequency of conference presentation', so the results may not be truly representative, and must be treated with caution.

5.7 Data analysis and interpretation for objective 6

Objective 6: To determine the perceptions of information professionals concerning the relationship between LIS research and practice

The data used were responses to Question 4 of the survey instrument, which asked respondents to specify how they thought the relationship between research and practice in the information sector might be best improved, by indicating their level of agreement with five suggested strategies.

The mean and standard deviation for each strategy were calculated, and the percentage of the sample that responded to each suggested strategy was also noted. The strategies were ranked in descending order of mean score. The mean scores were used as a single indicator of the level of agreement, facilitating comparison among the strategies (Alreck and Settle, pp. 374-5).

Table 23: Ranked actions for improving the relationship between research and practice (objective 6)
[Range = 1-6]

Rank	Action*	Mean	SD	% response
1	Include practical guidelines for applying results	4.72	1.19	100
2	Research awareness columns in newsletters	4.44	1.19	100
3	Staff attending / presenting at conferences	4.11	1.24	100
4	Staff enrolling in research skills courses	4.02	1.32	100
5	Research users participate in research process	3.97	1.22	100

* The actions are given in summary form in this report. The full form of each action is available in the questionnaire (Appendix A)

All survey respondents offered an opinion for each strategy suggested in this question. This is an excellent response rate, and the results can thus be interpreted with considerable confidence as to their representativeness.

The mean scores are all quite high, and fall within a narrow range (3.97 – 4.72). This was expected, since the suggestions offered here for improving the

current relationship between LIS research and practice have appeared in previous literature, and are recommended by expert commentators in this field (e.g. McClure and Bishop, 1989; McClure, 1989; Townley, 1991). Widespread agreement to these suggestions from qualified information professionals was anticipated.

The highest ranking mean score (4.72) was assigned by respondents to the strategy 'include practical guidelines for applying results'. This result lends weight to the perception, voiced in the literature on this topic, that academic research is too esoteric, impractical and remote to supply results of a practical and applicable nature (Hernon, 1989, p. 24). Likewise, respondents to McClure and Bishop's 1989 survey felt that researchers do not often present and articulate their results in a way that can be applied to practice. Such shortcomings were also noted in answers to Question 3.3 of the questionnaire (see section 5.3.3 of this report) where 'practical workplace problems not addressed' was the third highest-ranking reason why respondents choose not to consult the research.

The second ranking strategy (mean = 4.44) was 'research awareness columns in newsletters'. The Dunedin Library Research Group noted "widespread support for the idea of a national database" or research register to which "all libraries could both refer and contribute" in their 2000 study of research by New Zealand library practitioners (Finnie, Frame and Stewart, 2000, p. 87). Support for the effective dissemination of research findings using current awareness media is similarly evident in responses to this survey.

The third ranking strategy – 'staff attending / presenting at conferences' – scored a mean of 4.11. From the discussion of objective 4 subquestion 9, and objective 5 above (sections 5.5.8 and 5.6 respectively of this report), such professional participation does seem to result in increased levels of research consultation. This would alleviate somewhat the perceived lacuna between research and practice, exacerbated by the apparent reluctance of practitioners to

use the academic research productions and thereby test the utility of research results.

The lowest ranking score (3.97) was assigned to the strategy of encouraging intended research consumers or users to 'participate in research process'. Such a low comparative ranking (on a Likert scale from 1 to 6, this is a high mean score) may have resulted from perceived logistical difficulties inherent to this process: one respondent commented that this would be difficult to achieve. Funding constraints and demands on staff time, particularly in very small libraries/information centres, would certainly hinder participation by practitioners in academic research endeavours. One respondent had noted in response to an earlier question that successfully encouraging staff to attend and/or present papers at conferences/professional meetings "depends on size of library". The specific reasons why respondents perceived this as a difficult approach to the problem deserve close examination. As commentators on the topic advocate, practitioners should not function as mere consumers of the researchers' products; they should be able to share their practical experiences and problems with the research community and participate in research processes in a more direct fashion (Schön, 1983, p. 323).

The highest standard deviation score (SD = 1.32) occurred for the fourth ranked strategy – 'staff enrolling in research skills courses'. Such divergence in opinion may be the result of some respondents having completed qualifications with a research method / project component, and having consequently developed a high opinion of the value of such courses to research awareness, understanding and use. Respondents who had not undertaken a research component as part of their professional qualification may have felt less convinced of its value, particularly if their own personal awareness and use of the research literature is already considerable.

The smallest standard deviation (SD = 1.19) occurred for those strategies

ranked first ('include practical guidelines for applying results') and second ('research awareness columns in newsletters'). Such uniformity of opinion for the two highest-ranking strategies sends a clear message to the LIS community that energy and focus should be assigned to these remedial actions for resolving the perceived dichotomy in interactions between the research and practice communities.

One respondent made the noteworthy additional suggestion of "encouraging staff to do literature reviews in relation to internal development projects." Such a strategy helps alleviate the tension between practitioners who require research that can be applied to operational concerns of the workplace, and academic researchers, who require integration of their research findings into subsequent research productions. Through a comprehensive consideration of previous LIS research, such as that recommended by the respondent above, action researchers in the practical domain could usefully draw upon previous research productions, either basic or applied, for the ultimate solution of planning, decision-making, and evaluation concerns. As Townley noted (1991, p. 270), a librarian "can address a local problem and contribute to the further development of the profession and its theory" by applying a rigorous research process to their investigation.

The collective conclusion gleaned from answers to Question 4 is that information professionals in New Zealand tertiary and government libraries feel there *is* a dichotomy between LIS research and practice, with tensions between the motivations guiding each community. As one respondent noted (with emphasis in the original),

> Academic LIS research [is] not really helpful – we require operationally based material. Academic research *reflects* the trends and developments – it does not provide *leadership*. This is usually to be found at practitioner level.

6 Conclusion

In an attempt to address a gap in the literature concerning the local situation, the aim of this study was to investigate the perceptions of information professionals working in New Zealand tertiary and non-profit government institutions regarding LIS applied research. Because the objectives of such organisations are inextricably linked to issues of information use, generation and dissemination, their employees were selected as key informants and their perceptions were assumed to offer a best case scenario of the current local situation. The research should thus be construed as a preliminary exploration and associational relationships identified from the results could be subjected to more rigorous testing in subsequent studies.

The study found that the amount of research consultation by information professionals is low, and their amount of research production, and encouragement for their employees to conduct research, are even lower. Information professionals most often consult the research to stay current with trends and developments in LIS, and to support workplace activities such as decision-making, problem-solving, planning and evaluation. They do use the professional literature for purposes of self-motivated research that is not specifically connected with workplace problems, but this is less of an impetus for research consultation.

From these findings, applied research that can be used to resolve operational concerns in the workplace seems to be most suited to the requirements of LIS practitioners. The perceived inadequacy of research to address practical workplace problems was a major reason for information professionals not consulting the research. Information professionals also identified problems with the way in which research is presented, and the repercussions this has on its capacity to be understood and applied effectively, as affecting their levels of research

consultation. Furthermore, they indicated that the most effective strategy for improving the current relationship between the LIS research and practice communities is the encouragement of research that includes practical guidelines for the application of results in a workplace context.

It is recommended that LIS researchers (both academics and practitioners) heed this message from research consumers, and ensure that their research productions have external validity and are presented with clear practical guidelines, thereby enhancing the capacity of the research to be applied to diverse workplace contexts. This does not necessarily mean there is no place in LIS for basic research. The findings from basic research can and should be applied to pragmatic situations to test the utility of results, and conversely, results from a series of applied studies may reveal trends that can be underpinned by theoretical reasoning, and analysed more closely in subsequent basic research explorations.

The instigation of research current awareness items in library / information publications was also supported by this study's respondents as an effective way of improving interactions between research and practice. Such a strategy has been recommended in a New Zealand context in previous studies on this topic (Cave, 1991; Finnie, Frame and Stewart, 2000). Combined effort directed towards the development of such a resource, by and for the communities of research and practice, is highly recommended in light of these findings; increased interaction between the two communities would arise from mutual awareness of each other's research productions and research requirements.

Results from this project indicate that Schön's Reflection-in-Action model does seem to apply to the current situation in New Zealand's information sector, and that practitioners seeking to address dynamic workplace problems find information exchanged via professional networking more immediately effective

than that taken from a formal, published store of research findings. For this reason, and to promote research use by practitioners, it is recommended that senior library managers encourage their information staff to participate in professional activities such as conferences, meetings, and email list-serves. Professional forum attendance by information professionals seemed to encourage a corresponding increase in research use. Likewise, information professionals who present at conferences / professional meetings (even only once) had a considerably higher tendency towards research use than those who have not yet presented in this context.

Library managers should urge their information staff to enrol in courses of study that involve a research (methods and/or project) component. This is because the survey results suggest that information professionals with a postgraduate degree / certificate / diploma in LIS exhibited a considerably higher mean score for research use than those with a non-graduate diploma / certificate. Similarly, participants who undertook a research component in their highest LIS qualification displayed a greater mean score for research use than those whose course of study did not contain a research component. LIS practitioners who regularly consult the research are likely to evaluate and analyse it in a more critical and imaginative fashion. This enables them to adapt and apply research findings to their local, workplace situation more effectively, and may also mean they develop an intrinsic understanding and appreciation of the research needs of their clientele as they set about fulfilling reference and research requests.

Survey respondents indicated that the research is most often not consulted due to time constraints; information professionals are too busy attending to operational demands to be able to dedicate significant amounts of time to research consultation. Increases in staff numbers would help alleviate this predicament, yet many libraries and information centres are already operating according to tight

budget guidelines, and extra funding for additional staff support is not feasible. On this note, the largest (81 EFTS and more) libraries / information centres scored a considerably higher mean for research use than medium/large (6 - 80 EFTS) and very small institutions (5 EFTS or less). This suggests that research use by information professionals increases as the size of their library/information centre increases. This may be due to larger organisations having access to funding provisions that enable the acquisition of research literature to be used by that organisation's information professionals.

Problems with the physical and intellectual availability of research were a less significant reason for information professionals choosing not to consult the research. This suggests that LIS researchers are able to distribute their research findings adequately for the needs of New Zealand tertiary and government information professionals. It also implies that problems with bibliographic control and the lack of widespread dissemination and visibility for in-house and local research reports are not as serious as intimated in the literature on this topic. There is a caveat: if problems with effective research dissemination and availability do occur, the respondents to the survey may be unaware of the amount of research available to them, and may not perceive this problem as existing. On this note, the support exhibited by survey respondents for a current awareness service as a valid strategy for improving interactions between research and practice suggests that they do perceive shortcomings in their awareness of recent research productions.

Those respondents who graduated with their highest LIS qualification in 1996 or more recently had a considerably lower mean score for research use than those respondents who graduated in 1995 or before. Combined with the fact that respondents who have held their current position for more than 5 years had a higher mean score for research use than those who have held their current position for 5 years or less, this suggests that the amount of research consultation by

information professionals increases with the number of years of experience they have at a senior level. This observation implies that the operational demands of senior management positions incite greater research use than that required by recent graduates in entry-level professional positions, perhaps because the further up the organisational hierarchy an information professional progresses, the more complex and demanding their operational tasks and responsibilities become. Thus, the more often research must be consulted to solve pragmatic problems. Such a speculation is supported by the trend already noted that applied research is required and consulted to resolve practical problems in the workplace. The difference in mean scores for research use by chief librarians and library managers comprising this study's sample was minimal and as such, these results are inconclusive. A larger sample across organisational hierarchies, not confined to the highest strata only may have produced more illuminating results regarding a relationship between varying levels of professional responsibility and amounts of research use, and is recommended as a future study.

Furthermore, a proportional stratified sample across professional and para-professional information workers in all types of New Zealand libraries / information centres would be needed to assure that findings are representative of and generalisable to the entire population. The results from such a study could be usefully compared with the views expounded in this research project which, as noted, represent a preliminary exploration of what might be construed as a best case scenario given the purposive sample deliberately used.

Regarding improvements to the relationship between research and practice, the perceptions of both academic and practice-based active LIS researchers could be canvassed and compared with responses obtained in this study, to more accurately delineate the motivations and unique research requirements guiding both senders producers and consumers in the research community.

Appendix A: Survey instrument

Question 1

1.1

Please tick a circle to indicate your gender:

       O   M

       O   F

1.2

On 31st March 2001 my age will be:

       O   25 or under

       O   26-35

       O   36-45

       O   46-55

       O   56 and above

Question 2

2.1

From the list below, please tick the *highest* library / information qualification you hold, and specify whether it contained a research (methods or project) component *(tick only one)*:

	Qualification	Research component *- Please circle*	
O	Postgraduate Degree	Yes	No
O	Bachelors Degree	Yes	No
O	Non-graduate Certificate or Diploma	Yes	No
O	Yet to complete my professional qualification		

2.2

Please indicate the date you completed your *highest* library / information qualification:

       O   pre-1975

       O   1975 - 1980

       O   1981 - 1985

       O   1986 - 1990

       O   1991 - 1995

       O   1996 – Current Student

2.3

Please specify your major subject area (other than library / information management) of tertiary-level study:

_____

(e.g. Sciences, Health Sciences, Humanities, Commerce/Business, Law, Engineering, Architecture, Social Sciences etc. – *please name one only*)

2.4

How many months/years have you held your current position:

- O Less than 6 months
- O 6 months - 1 year
- O 1 - 2 years
- O 2 - 5 years
- O 5 - 10 years
- O 10 years or more

2.5

Please specify your level of responsibility *(tick only one)*:

- O Chief Librarian (denoting librarians in charge of a library / information centre)
- O Library Manager (denoting librarians in charge of a department, unit or area within a library / information centre who report to a chief librarian)

2.6

Please indicate your specialty area of responsibility *(tick only one)*:

- O Management / Administration
- O Circulation / Lending Services
- O Distance Learning / Remote User Services
- O Document Delivery / Interloan
- O Reference / Research
- O Systems / IT Support
- O User Education / Information Literacy
- O Rare Books / Special Collections
- O Archives / Records Management   [continued over]

O   Knowledge Management

O   Collection Management (defined as comprising Collection Development, Acquisitions and/or Cataloguing)

O   Other – please specify_____

2.7

How many EFTS (equivalent full-time staff) - both professional, and para-professional - are employed by your library / information centre's budget:

O   5 or less

O   6 - 20

O   21 - 40

O   41 - 60

O   61 - 80

O   81 - 100

O   101 - 120

O   121 or more

2.8

Please denote the organisational context of your library / information centre *(tick only one)*:

O   Tertiary academic

O   Government (funded or affiliated)

2.9

How often do you typically attend conferences / professional meetings external to your own organisation:

O   Not once to date

O   Once a year or less

O   Twice a year

O   Three times a year

O   More than three times a year

2.10

How often do you typically present papers or seminars at conferences / professional meetings external to your own organisation:

O   Not once to date
O   Once a year or less
O   Twice a year
O   Three times a year
O   More than three times a year

Question 3

3.1

Please circle a number from 1 (never) to 6 (regularly) to indicate how often you consult LIS (library and information studies) research:

Never				Regularly	
1	2	3	4	5	6

For the purposes of this questionnaire, research is any systematic effort to generate new information, create new knowledge, or produce new interpretations of existing knowledge or information, suggesting attention to method and exactitude in obtaining and analysing results.

3.2

Please refer to the reasons suggested below to indicate why you consult the research, by circling a number from 1 (never a reason) to 6 (regularly a reason):

	Never				Regularly	
• To stay current with developments and trends in LIS for personal professional development	1	2	3	4	5	6
• To assist with managerial activities in my library / information centre such problem-solving, decision-making, planning and/or evaluation	1	2	3	4	5	6
• To provide information when conducting self-motivated research not necessarily intended to solve problems specific to my workplace	1	2	3	4	5	6
• Other (please specify below)	1	2	3	4	5	6

_____

_____

_____

_____

3.3

Please refer to the factors suggested below to indicate why you do <u>not</u> consult the research, by circling a number from 1 (never a factor) to 6 (regularly a factor):

	Never				**Regularly**	
• Time constraints	1	2	3	4	5	6
• Problems with physical availability (e.g. resource constraints affect my library's budget for obtaining professional literature)	1	2	3	4	5	6
• Problems with intellectual availability (e.g. poor bibliographic control of research findings)	1	2	3	4	5	6
• The research does not address practical problems in the workplace	1	2	3	4	5	6
• The research is presented in a way that is difficult to understand and apply	1	2	3	4	5	6
• Conferences, meetings, and professional networking provide sufficient knowledge sharing opportunities with colleagues and researchers	1	2	3	4	5	6
• Other (please specify below)	1	2	3	4	5	6

_____

_____

_____

_____

3.4

Please circle a number from 1 (never) to 6 (regularly) to indicate how often you have conducted research related to your employment in the information sector:

Never				**Regularly**	
1	2	3	4	5	6

Research *is any systematic effort to generate new information, create new knowledge, or produce new interpretations of existing knowledge or information, suggesting attention to method and exactitude in obtaining and analysing results.*

3.5

Please circle a number from 1 (never) to 6 (regularly) to indicate how often you have encouraged others in your employ to conduct research related to their employment in the information sector:

Never				Regularly	
1	2	3	4	5	6

Question 4

Reflecting on the current relationship between research and practice in the information sector, please refer to the options suggested below to indicate how you think this relationship might be improved, by circling a number from 1 (strongly disagree) to 6 (strongly agree):

	Strongly Disagree				Strongly Agree	
• Encourage research productions that include practical guidelines for applying the results in the workplace	1	2	3	4	5	6
• Encourage the intended users of a research study to participate in the research process	1	2	3	4	5	6
• Encourage staff to become better consumers and producers of research by enrolling in courses that develop their research skills	1	2	3	4	5	6
• Encourage staff to attend and/or present papers at conferences and professional meetings	1	2	3	4	5	6
• Contribute and have access to columns in library / information newsletters or list-serves that identify, index and summarise recent research projects	1	2	3	4	5	6
• Other (please specify below)	1	2	3	4	5	6

_____

_____

_____

_____

Thank you for your time

Appendix B: Information sheet

A Study into the Use of Applied Library and Information Studies (LIS) Research in New Zealand Libraries

4th March 2001
I would like to invite you to participate in research that I am conducting as part of my Master of Library and Information Studies course at the Victoria University of Wellington.

The aim of this survey is to discover the perceptions of information professionals in New Zealand tertiary academic and non-profit government library / information organisations regarding applied LIS research. It is hoped that the responses will indicate practitioners' reasons for and against consulting research, their tendency towards conducting it, and ways by which they feel the relationship between research and practice might be improved. Answers will be analysed according to the education, experience, level of responsibility, specialty area, library size and organisational context, and amount of participation in conferences / professional meetings of each respondent.

The attached questionnaire is short, and should take less than 10 minutes to complete. You may choose to answer it yourself; alternatively, please dispatch it to an information professional in your organisation willing to participate. (Along with this information sheet and the consent form that follows, the questionnaire may be photocopied.)

As the respondent, please sign the enclosed consent form and post it along with the completed questionnaire to: K. J. Turner
218 Musselburgh Rise
Dunedin

As this project is subject to assignment deadlines stipulated by the Victoria University of Wellington, responses before March 19th 2001 would be much appreciated.

If you are interested in the findings of the research please provide your address (on the consent form) so that a summary report can be sent to you in the coming months. Should you have any questions, or require further information, please feel free to contact me.

Thank you for your time.

Kathlyn Turner
Student, Master of Library and Information Studies
Victoria University of Wellington
kat_turner@xtra.co.nz

Supervisor: Prof. Gary Gorman
School of Communications and Information Management
Victoria University of Wellington
gary.gorman@vuw.ac.nz

Appendix C: Consent form

A Study into the Use of Applied Library and Information Studies (LIS) Research in New Zealand Libraries

Thank you for your interest in this project. If you would like to participate by completing the enclosed questionnaire and are satisfied with the information provided, please read the following and sign below.

I understand that the results of this project will be submitted for marking by the School of Communications and Information Management and deposited in the Victoria University of Wellington Library. They may be made available in reports or other publications, but full confidentiality is assured and I will not be identified in any way.

I understand that raw data in the form of my individual survey responses will be used only for the purposes of this research and will be destroyed when the researcher has completed the data analysis; only aggregate data will be retained at the completion of the research project.

I accept that all data will be securely recorded and processed in a password-protected electronic environment, and only the project's supervisor and researcher will have access to that data.

I understand that my contribution is voluntary and I am not obliged to participate, nor to give explanation for withdrawing my survey responses from consideration at any stage of the project.

Signature: _____

If you would like to receive a summary of the findings of the research, please provide your name and address below:

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