

**New Zealand Published LIS and ARM Research, 2004 - 2014:
A Subject Analysis**

by

Elizabeth Godfrey

Submitted to the School of Information Management,
Victoria University of Wellington
in partial fulfilment of the requirements for the degree of
Master of Information Studies

28 February 2016

VICTORIA UNIVERSITY OF WELLINGTON

School of Information Management

Master of Information Studies

IMPORTANT DISCLAIMER

with respect to a MIS Research Project (INFO 580)

New Zealand Published LIS and ARM Research, 2004 – 2014: A Subject Analysis

(hereafter referred to as 'The MIS Research Project')

being undertaken by

Elizabeth Godfrey

in partial fulfilment of the requirements of the degree of
Master of Information Studies,
School of Information Management, Victoria University of Wellington.

Topic Commencement: Date

1. Victoria University of Wellington and its Council, its members, staff, employees, students and agents undertake no duty of care in contract, tort, or otherwise, to users (whether direct or indirect) of the MIS Research Project and make no warranties or representations of any kind whatsoever in relation to any of its contents.
2. The MIS Research Project is only made available on the basis that all users of it, whether direct or indirect, must take appropriate legal or other expert advice in relation to their own circumstances and must rely solely on their own judgement and such legal or other expert advice.
3. Under no circumstances will Victoria University of Wellington and its Council, its members, staff, employees, students or agents be liable in any way whatsoever, whether in contract, tort (including negligence), for breach of any statutory or regulatory duty (to the fullest extent permissible by law), or otherwise, to any user (whether direct or indirect) of the MIS Research Project for any loss or damage whatsoever arising directly or indirectly as a result of the use in any way of the MIS Research Project.
4. Each exclusion in the clauses of this disclaimer and each protection given by it is to be construed as a separate exclusion applying and surviving even if for any reason any of the exclusions or protections are held inapplicable in any circumstance.

Abstract

Research problem: While subject analyses of research topics have been conducted on Library and Information Science (LIS) and Archives and Records Management (ARM) research internationally, such analyses of New Zealand literature are rare, and those that exist are limited to only a part of the literature. Overall, there is very little written analysing LIS and ARM research in New Zealand, and few prior studies analysing the subject trends of New Zealand LIS and ARM research literature.

Methodology: *A priori* content analysis was conducted of a purposefully selected sample of research literature. Journal articles and conference papers from New Zealand LIS and ARM professional journals and conference proceedings, from the period 2004 to 2014 were selected, and the topics of research were categorized using Zins' (2007) Classification Scheme of Information Science. These were then analyzed to determine which research topics are currently receiving the most interest at present, which are receiving the least attention at present, and how the topics researched have changed and developed over time.

Results: It was found that the research topics of most focus were consistently Information Industry Economics and Management and Information/Learning Society. Conversely, the topics receiving the least attention were Diffusion Studies, which did not receive any research attention, and Methodology, which consistently received very low research attention. There were also several other observable changes in the topics of research focus in the literature, with a decline in the topics of Data Organization and Retrieval, Foundations of Information Science, Social Information Science and User Studies, and an increase in Information Ethics and Law and Information Technology.

Implications: This research enables researchers to identify research topics of interest, as well as gaps in New Zealand LIS and ARM research literature. New Zealand researchers will be able to identify new research topics to enrich the current body of knowledge, and identifying topics of high activity can have important implications for strategic planning in research and research policy. Researchers in other countries can also use this study to conduct similar studies to explore research literature trends in their own setting, and add to the existing international LIS body of knowledge.

Keywords: Content analysis, subject analysis, research, library and information studies (LIS), archives and records management (ARM).

Acknowledgements

I would like to sincerely thank my supervisor, Dr. Chern Li Liew in the School of Information Management, for supervising my project, and for her invaluable advice, guidance, and support throughout both the INFO 528 Research Methods course, and the INFO 580 research process.

I would also like to thank Donna Coventry for coding a sample of my data for to ensure inter-rater reliability.

I would also like to thank my family, friends, colleagues, as well as the teaching staff and my fellow students in the School of Information Management for the support and encouragement that they have given me in numerous ways throughout the course of my degree.

Table of Contents

<i>Disclaimer</i>	i
<i>Abstract</i>	ii
<i>Acknowledgements</i>	iii
Table of Contents	iv
1. Research Problem	1
1.1. Problem Statement.....	1
1.2. Rationale for Study	2
1.3. Research Objectives.....	4
1.4. Research Questions	5
1.5. Theoretical Framework.....	5
2. Literature Review	6
3. Research Design	9
3.1. Research Methods	9
3.2. Research Sample.....	9
3.3. Data Collection.....	10
3.4. Data Coding.....	10
3.5. Data Analysis.....	11
3.6. Issues of Validity and Reliability.....	11
3.6.1. Validity.....	11
3.6.2. Reliability.....	13
<i>Table 1: Examples of Keywords in Each Category</i>	13
3.7. Limitations and Delimitations	15
3.7.1. Limitations.....	15
3.7.2. Delimitations	16
3.8. Inter-Rater Reliability.....	17
4. Results and Discussion	19
4.1. Distribution of Literature across Channels	19
<i>Table 2: Distribution of Literature across Channels</i>	19
<i>Figure 1: Distribution of Literature across Channels</i>	19
<i>Table 3: Distribution of Literature across Channels by Year</i>	20
<i>Figure 2: Distribution of Literature across Channels by Year</i>	20
4.2. Analysis of Subject Trends in Research Literature.....	21
<i>Figure 3: Distribution of Topics in Research Literature, 2004 – 2014</i>	21
<i>Table 4: Distribution of Topics in Research Literature, 2004 – 2014</i>	22
<i>Table 5: Distribution of Topics in Research Literature by Year, 2004 – 2014</i>	22
<i>Figure 4: Distribution of Topics in Research Literature by Year, 2004 – 2014</i>	23
5. Conclusion	26
References	28
Appendix	47
1. Zins' Classification Scheme.....	47

New Zealand Published LIS and ARM Research, 2004 – 2014: A Subject Analysis

1. Research Problem

1.1. Problem Statement

Library and Information Science (LIS) and Archives and Record Management (ARM) are academic, intellectual, and professional disciplines, with members active in research and practice, and global fields of research standards, networks and distribution. The two fields have, in recent years, experienced significant research growth and development in all parts of the world, and there is considerable output spanning a diverse range of subfields, and a correlating expansion of scholarly journals, newsletters, and conferences dedicated to reporting the results of this research (Kim & Lee, 2008; Larivière *et al.*, 2012). While in the early development of the field, LIS and ARM research in New Zealand lagged considerably behind that in North America, the United Kingdom, and neighbouring Australia, the level of research in New Zealand has steadily increased, and research being published is increasing rapidly (Calvert & Cullen, 1996; Du *et al.*, 2014; Khoo *et al.*, 2009). The Library and Information Association of New Zealand's (LIANZA) Research Special Interest Group provides a meeting point for interested researchers and holds regular sessions at LIANZA conferences, and the LIANZA has its own professional journal which publishes local research. Likewise, the Archives and Records Association of New Zealand (ARANZ) encourages research on the preservation and use of archives and records, and works to promote the publication of the results of this research – predominantly in their own professional journal and at their annual conferences (ARANZ, 2009; Wilsted, 2002). Research methods papers and a research project have been added to the curriculum of the Master of Information Studies at Victoria University of Wellington, which has resulted in many more LIS and ARM professionals graduating with improved research skills (Calvert, 2014; Calvert & Cullen, 1996; Chawner, 2013; Finnie *et al.*, 2000; LIANZA, 2015c; Turner, 2002; Wilsted, 2002). For LIS and ARM professionals such as Cornelius (1997), Hall (2010; 2011), Luo (2011), Powell *et al.* (2002) and Watson-Boone (2000), research is a reflexive part of their work, facilitating professional reflection and development, and is an integral aspect of doing professional work.

However, researchers such as Larivière *et al.* (2012) and Tuomaala *et al.* (2014) have identified the LIS field as a whole as lacking comprehensive subject analyses of published research, particularly considering how the field has evolved, and assert that there is a need for systematic content analysis of research topics in the current LIS research literature. While subject analyses of research topics have

been conducted on LIS research internationally (including in the comparable research environments of United States, United Kingdom, and Australia), analyses of New Zealand LIS literature are rare, and those that exist are limited to only a part of the literature (see Finnie *et al.* (2000; Turner (2002). Generally, there is very little written on the undertaking of LIS research in New Zealand, and no prior studies analysing the subject trends of New Zealand LIS research literature. The ARM field is even less studied, with few subject analyses conducted on ARM research internationally (see Onyanha *et al.* (2010), and in New Zealand, only one study able to be located (Bakker, 1998), which conducted a content analysis of ARM research in the *Archifacts* journal in the period from 1977 to 1996.

1.2. Rationale for Study

Historically, New Zealand, as in other countries, such as Australia, the United States and the United Kingdom, has long seen LIS and ARM professionals professionally aligned (McCausland, 2011; Ryan & Lomas, 2007). As disciplines, LIS and ARM seek to create comprehensive bodies of knowledge related to the storage, transmission, organization, management, and use of information. This includes both theoretical components which inquire into the field, and practical components which develop, innovate or solve problems in services and products - for example, those related to information retrieval, classification and indexing, management and provision of information services, and teaching or training information professionals (Haddow & Klobas, 2004; Hjørland, 2000; Klobas & Clyde, 2010; McNicol & Dalton, 2004; Ryan & Lomas, 2007).

Over time, the LIS and ARM fields have evolved, and increasingly no longer focus only on traditional aspects of librarianship and archival studies, but rather, have matured into a variety of multidisciplinary fields, incorporating areas such as information technology, education, communication, law, management, and archives and record management (Biggs, 1991; Bronstein, 2007; Buckland, 1986; Busha & Harter, 1980; Couture & Doucharme, 2005; Gingras & Larivière, 2010; Ham, 1994; Julien *et al.*, 2011; Logan & Hsieh-Yee, 2001). These developments, as well as technological developments in the field (primarily digitisation) have brought the LIS and ARM fields increasingly closer together.

Like many areas, New Zealand has been affected by changes in the information landscape, which has in turn led to its information industries facing a rapidly changing environment. The most significant changes include new and more flexible ways of publishing; new formats of information resources; changing ideas about the access to, use of, and relationships between, information resources; and increased user familiarity with searching, and corresponding changes in users' information

behaviours. In addition, the vast increase in information resources of all types (both published and unpublished), the consequent challenges of managing these resources, and a new and increasing range of search and discovery tools that provide competition for libraries and archival institutions all present challenges (Ashcroft & McIvor, 2000; Bronstein, 2007; Du et al., 2014; Logan & Hsieh-Yee, 2001; Onyancha *et al.*, 2015; McCausland, 2011; Spink & Heinström, 2012). Ultimately, these changes have affected both the role of libraries and archival institutions in the wider community, and the LIS and ARM professionals within them. Accordingly, professionals in these fields now need to be highly competent in technology and web-based tools, organizing and finding content, and the provision of niche products and services. In a period of rapid change, it is therefore important that LIS professionals are adequately up-to-date with the fast changing information landscape (Cossham, 2013; Cossham et al., 2014; New Zealand Association of Public Library Managers, 2012; National Library of New Zealand, 2007).

Larivière *et al.* (2012) and Ryan & Lomas (2007) assert that the LIS and ARM research literature mirrors the fields' academic and practical concerns and trends, and as such, analyses of research literature are valuable because they summarize research findings of multiple studies, provide indications of trends in topics of interest and discover consistent or inconsistent trends, assess the scholarly maturity of the area, and evaluate the responsiveness of authors to concerns or criticisms about work in specific area (Buttler, 1991; Feehan *et al.*, 1987; Julien *et al.*, 2011; Kuhn, 1962; McClure & Bishop, 1989; Saxton, 2006; Turcios *et al.*, 2014). They contribute to the overall knowledge of the fields, how they have evolved, and how they may evolve in the future (Tuomaala *et al.*, 2014). McKeon and Williams (1997) assert that information studies professional journals provide an outlet for serious reflective writing, adding significantly to the body of knowledge in New Zealand. Frame (1999) also observes that amongst the marks of a profession are the continual re-examination of old assumptions and a quest for new knowledge, and dissemination of new information, theories, and opinions to the members of the profession. As such, she states that professional journals should reflect all aspects of the LIS professional endeavors in this country, promoting inquiring, informative, contemplative, and provocative writing, measuring new political, economic and social trends against our traditional ideas and values, evaluating new technological developments and their impact on our ways of doing things, and encouraging professionals to take part in intellectual debate.

Frame (1999) also argues that while access to international literature is vital, it is also necessary to have New Zealand publications and forums to publish New Zealand produced research, and which reflect our bicultural heritage and our unique history and situation. In addition, Naseer & Mahmood

(2014) and Onyancha *et al.* (2015) have observed that researchers in different regions focus on different topics, and Aina & Mooko (1999), Du *et al.* (2014), Childers (1990), Hernon (1989), Ryan & Lomas (2007), and Van House (1991) have noted a tendency for LIS researchers to investigate and analyse their own regions' research and applied practices. Accordingly, the findings of this study will present New Zealand and international LIS and ARM researchers with the current state of the fields in a country whose research has had international impact, but has not been the subject of extensive analysis. As a result of this study, New Zealand researchers will be better equipped to identify gaps in the research, and therefore identify new research topics to enrich the current body of knowledge (Aina & Mooko, 1999; Du *et al.*, 2014; Julien *et al.*, 2011; McNicol & Dalton, 2004; Tuomaala *et al.*, 2014). In addition, Uzun (2002) asserts that on a local level, identifying topics of high activity can have important implications for strategic planning in research and research policy in a field. Researchers in other countries can also use this study to conduct similar studies to explore research literature trends in their own setting, which will add to the existing international LIS body of knowledge (Naseer & Mahmood, 2014). Townley (1991) notes that by conducting local research, information professionals can address a local problem, and also contribute to the wider body of knowledge, and development of, the profession. As such, single country studies contribute to the holistic understanding of the wider LIS field (Huang & Lin, 2011; Larivière *et al.*, 2012; Sapa, 2007; Schlögl & Stock, 2008; Hu *et al.*, 2011).

1.3. Research Objectives

The objective of this study is to conduct a subject analysis of research articles published in the New Zealand LIS professional journal *New Zealand Library and Information Management Journal (Ngā pūrongo) (NZLIMJ)*, the ARM professional journal *Archifacts*, as well as conference proceedings from the LIANZA and ARANZ annual conferences, in the period from 2004 to 2014, to determine:

- Which research topics are receiving the most interest in New Zealand LIS and ARM research journals and conference proceedings at present;
- Which research topics are receiving the least attention in New Zealand LIS and ARM research journals and conference proceedings at present;
- How the topics researched in these channels have changed and developed over time.

1.4. Research Questions

This research project addresses the following three research questions:

- Which topics are receiving the most attention in research published in New Zealand LIS and ARM journals and conference proceedings (based upon the categories outlined in Zins' Classification Scheme of Information Science)?
- Which topics are receiving the least attention in research published in New Zealand LIS and ARM journals and conference proceedings (based upon the categories outlined in Zins' Classification Scheme of Information Science)?
- In what ways have the topics of research focus in New Zealand LIS and ARM journals and conference proceedings changed in the period between 1994 and 2014 (based upon the categories outlined in Zins' Classification Scheme of Information Science)?

1.5. Theoretical Framework

Classification theory is utilized in both the development, and analysis, of classification systems, and provides means of structuring and communicating information about a given topic. It can be applied to a variety of textual-analytic approaches, such as content analysis, grounded theory, discourse analysis, and conversation analysis (for use in studies, see Abrizah *et al.*, 2013; Aharony, 2009; 2011; Asirvatham & Kranthi Kumar, 2001; Attardi *et al.*, 1999; Boholm, 2013; Budd, 2006; Dilevko & Gottlieb, 2009; Hider & Pymm, 2008; Järvelin & Vakkari, 1990; Naseer & Mahmood, 2014; and Rochester & Vakkari, 2003). The application of classification theory can involve either breaking down extant and elicited texts into categories that are essentially classification systems created and defined by the researcher; treating extant texts themselves as explicit or implicit classification systems; or applying existing classificatory frameworks to extant and elicited texts (Dilevko & Gottlieb, 2009; Fairclough, 2003; Strauss & Corbin, 1998). This study will utilize the latter approach – applying an existing classification framework, Zins' Classification Scheme of Information Science, to analyse New Zealand published LIS and ARM research.

2. Literature Review

In order to analyse the intellectual and professional evolution of the LIS and ARM fields, subject analyses have been conducted by a number of researchers, spanning multiple countries and regions (see Åström, 2002; Atkins, 1988; Blessinger and Frasier, 2007; Buttlar, 1991; Davarpanah & Aslekia, 2008; Ginn, 2003; Hider & Pymm, 2008; Järvelin & Vakkari, 1990; 1993; Julien *et al.*, 2005; Koufogiannakis *et al.*, 2004; Kumpulainen, 1999; Milojević *et al.*, 2011; Nour, 1985; Rochester & Vakkari, 2003; Zhao & Strotmann, 2008). A variety of approaches have been used, included focusing on single publication years, specific geographic locations, the differences between literature published by practitioners and by academics, and specific variables such as the use of theory, or specific research methods (Julien *et al.*, 2011; Hsu *et al.*, 2015; Kim & Lee, 2008). It is worth noting that content analysis research from North America (the United States and Canada) in both LIS and ARM fields are well represented in the literature, due to the publication requirements of their faculty status academic librarians and archival staff (Avison *et al.*, 2008; Claver *et al.*, 2000; Davies, 2012; McBain *et al.*, 2013). However, there is no similar motivation for LIS and ARM professionals to undertake research and publication in comparative environments in the United Kingdom, Australia and New Zealand, as LIS and ARM professionals are largely employed as professional staff members, rather than faculty, and this is reflected in the lower level of research outputs in these countries (Bradley, 2008; Onyancha *et al.*, 2015). In addition, the fields are somewhat hindered by the large proportion of content analyses that are now dated, with the majority investigating research published in the 1970s and 1980s (see Atkins, 1988; Buttlar, 1991; Feehan *et al.*, 1987; Ingwersen, 1992; Järvelin & Vakkari, 1990; Kumpulainen, 1991; Peritz, 1980; Saracevic, 1999; and Vakkari, 1994). Since then, a comparatively limited number of content analyses investigating LIS in the 21st century have been performed (see Aharony, 2011; Åström, 2002; Milojević *et al.*, 2011; Janssens *et al.*, 2006; Koufogiannakis *et al.*, 2004; and Tuomaala *et al.*, 2014). This is similarly the case for ARM research, which is less represented in the literature, and suffers from dated analyses, as observed by researchers such as Onyancha *et al.* (2010) (see for example, Brichford, 1988; Cox, 1987; and Gilliland-Swetland, 1992).

While in early years of the disciplines, specific archives- and library-oriented activities such as appraisal, cataloguing, classification, and preservation featured frequently (Brichford, 1988; Cox, 1987; Gilliland-Swetland, 1992; Stephens, 1998; and Vakkari, 1994), interest seems to have shifted from specific technologies towards knowledge, users, and management, as observed by later researchers such as Ashcroft & Mclvor (2000), González-Alcaide *et al.* (2008), Hjørland (2002), and Zhao & Strotmann (2008). Tuomaala *et al.* (2014) analysed research articles published in core international LIS and ARM journals between 1965 and 2005, and found that since 1985, there has been

a decrease in research on methodological research, and an increase in information seeking and scientific communication. By 2005, the largest research areas were information storage and retrieval, scientific communication, service activities, user education, and information seeking, demonstrating a shift in research from organizations themselves, to the end users and developing systems for them. These findings were also supported by further studies that have observed the shift from the investigation of systems and institutions to investigation of individuals and end users (see González-Alcaide *et al.*, 2008; Hjørland, 2002; Vakkari, 1994; Zhao & Strotmann, 2008), as well as studies demonstrating a shift in the content of LIS education, from a traditional archives- and library-focused approach to user-focused approach, including such aspects as information-seeking behaviors of users, equity of access, information society, and information ethics (see Bronstein, 2007; McBain *et al.*, 2013; Basefsky, 1999; Coutts, 1997). Wilson *et al.* (2011) also analysed journal articles published between 1967 and 2008, and, in line with international researchers such as Larivière *et al.* (2012), and found a significant shift from library-related terms to information-related terms.

Ellis (2012), McNicol & Dalton (2000), and Woods & Booth (2013) (utilizing Koufogiannakis *et al.*'s (2004) methods to examine recent literature in the UK LIS field) found that while the topics researched varied depending on the specific concerns of their sector, practical topics that focused on information service delivery and its users dominated the research literature. Ellis (2012) conducted a content analysis of academic submissions made the 2011 United Kingdom's Research Assessment Exercises, and observed significant changes in emphasis in the research agenda of the discipline. This took the form of less interest in historical work, and more focus on information and knowledge management, and the dissemination, retrieval and publication of information. These conclusions supported the findings of the other United Kingdom researchers, as well as the wider LIS subject analysis literature, most notably Järvelin & Vakkari (1993). Blessinger and Frasier's (2007) analysis of LIS research journal articles between 1994 and 2004, also concluded that researchers and professionals largely remained interested in practical issues that face the profession. The most comprehensive subject analysis is Larivière *et al.* (2012)'s bibliometric study analysing LIS's first 100 years of research publication in the United States. This study found that most notable change during this period was a shift in focus from traditional librarianship to information and its use, as had been found in previous studies.

Studies such as Åström (2002); Milojević *et al.* (2011); González-Teruel & Abad García (2007) and Zhao & Strotmann (2008) have found that information and web technologies are increasingly one of the most frequently researched themes within LIS and ARM, and Cronin & Meho (2008) and Larivière *et al.* (2012) have observed that since the 1990s and early 2000s, interdisciplinary relationships between

LIS and ARM, and the computer sciences have continued to strengthen. Ashcroft & Mclvor (2000) stated that technological advances experienced by the industry showed no sign of slowing, and appears that this theme will continue to dominate research priorities for the foreseeable future. Together, these studies have supported Saracevic's (1999) earlier observation that the information industry is an increasingly technologically driven discipline.

Kim and Lee (2008) explored ARM research trends from 2001 to 2004, and found that the research could be grouped into seven main subject categories – digital libraries and digital archiving technologies; online resources and finding aids; archives and archivists; legal and political issues; electronic records and technical issues; records and information management; and email and information professionals. Additionally, they observed a dynamic change in the research themes, from traditional single-subject areas, to emerging, complex subject areas, including neighbouring subject areas such as LIS, as also observed by Menne-Haritz (2004). Within the emerging field of digital archives, the key emerging trends are authenticity, digital signature, migration, encapsulation, digital certification and social network (Gilliland & McKemish, 2004).

In New Zealand, only Bakker (1998) has conducted an analysis of ARM research trends, which analysed research literature published in the *Archifacts* journal in the period from 1977 to 1996, and found that while the profession was not fully grown, was on its way to maturity. However, she identified several ARM topics that were neglected in New Zealand research literature, most notably archival theory on current practice, and the subsequent gaps in theoretical knowledge that can be drawn upon by other researchers. No subject analyses of New Zealand LIS research literature were able to be located to date. Despite this, research has been conducted recently on the use of the research by LIS professionals. The Dunedin Library Research Group analysed the amount of research conducted in the workplace by New Zealand information professionals, and found that research was typically initiated to meet a present need, or to provide answers and directions likely to affect library operations (Finnie et al., 2000). King (2011) and Turner (2002) also found that applied research that addresses operational concerns most satisfies the requirements of New Zealand information professionals. This was reflected in practitioners consulting research in order to support operational activities such as decision making, problem solving, planning and evaluation. These findings also reflected those of researchers in neighbouring Australia, who found that the most frequently researched topics investigated by Australian researchers were practical service activities and research information seeking, and that this strong focus on service reflected an attentiveness to applied research to bring about improvement to the industry (Rochester, 1995).

3. Research Design

3.1. Research Method

The method for this study is *a priori* content analysis. Content analysis is a technique for describing and quantifying phenomena, by systematically extracting and evaluating aspects of content in bodies of textual material. By means of analysis, a large body of qualitative information is assigned to content-related categories, and reduced to a smaller and more manageable form of representation (Berelson, 1952; Cavanagh, 1997; Cole, 1988; Powell, 1997; Roberts, 2001; Rochester, 1995; Sandelowski, 1995; Smith, 2000). It allows researchers to test hypotheses about, and enhance their understanding of, a set of data (Downe-Wamboldt, 1992; Mellon, 1990; Palvia & Pinjani, 2007). Researchers such as Blessinger and Frasier (2007), Stemler (2001) and Weber (1990) assert that content analysis can be a useful technique for allowing researchers to discover and describe the focus of an individual's, group's, institutional or social attention (for example, trends and patterns in documents), and can offer insight into the development of a profession, indicating the subject trends and major issues that occupy the profession within a given period of time. In *a priori* content analysis, the categories are established prior to the analysis, based upon an existing theory or classification system (Hsieh & Shannon, 2005; Kyngäs & Vanhanen, 1999; Weber, 1990). In the last few decades, its use has steadily grown, and it has been used in LIS research to analyse the content of monographs, newspapers, and journals, to investigate such aspects as trends, themes and bias (Bangert-Drowns, 1984; Neuendorf, 2002; Rochester, 1995; Rosenthal, 1991; Saxton, 2006; Trahan, 1993).

The methods used in the study will involve both qualitative and quantitative elements - a qualitative coding system (Zins' (2007) Classification Scheme of Information Science), and a quantitative analysis of the data produced from the coding process (Hsieh & Shannon, 2005; Morgan, 1993). Krippendorff (2004, p. 16) stresses that "all reading of texts is qualitative, even when certain characteristics of a text are later converted to numbers," and likewise, quantitative research often includes a basic qualitative component – qualities, not the phenomena or objects themselves, are measured or counted. As such, without first defining what is being measured or counted, one cannot perform quantitative analyses (Barrett, 1983; Diseing, 1971; Fidel, 1984; Fidel, 1993; Gephart, 1988; Neuendorf, 2002; Ratcliff, 1983; Trahan, 1993).

3.2. Research Sample

The population of interest for this study is LIS and ARM research conducted within New Zealand. As Bloor & Wood (2006), Duncan (1989), and Elo & Kyngäs (2008) state, it is important that the sample

is representative of the population from which it is selected, so that the findings of the study are able to be generalized to the wider population. Accordingly, journal articles and conference proceedings were selected as the analysis units, due to the important role journals and conference papers play in scholarly communication and the transmission of research ideas and trends. As Aharony (2011), Davarpanah & Aslekia (2008) and Tuomaala *et al.* (2014) assert, they represent a picture of a discipline and profession, and are often a primary source for indicating emerging new ideas, research patterns, and research gaps. Additionally, journal articles and conference proceedings form the core of the literature cited in LIS and ARM research, and have been the sole source of data in several recent studies of LIS and ARM published research (see Hider & Pymm, 2008; Koufogiannakis *et al.*, 2004; Milojević *et al.*, 2011).

Tuomaala *et al.* (2014) state that if the aim of a study is to give representative account of LIS and ARM research, the source data should include all research publication in that field. Therefore, the selected research articles were sampled through a systematic sampling technique methodically selected from the larger body of literature. This has resulted in a purposive sample of research articles published in *NZL/NZLIMJ* and *Archifacts*. Together, these two publications have been the core LIS and ARM research journals in New Zealand. The 2004 - 2014 reference period was selected because it was considered that a ten-year period would provide an appropriate period length for analysis of trends over time in the topics of research articles, as observed in research such as Arredondo *et al.* (2005), Delgado-Romero *et al.* (2005), Singh & Shelton (2011) and Villani (2001).

3.3. Data Collection

This study's data collection involves gathering primary data, which was extracted from the research articles selected for analysis. This data includes the necessary details from the articles – article titles, authors, and keywords, as conducted in research studies such as Milojević *et al.* (2011) and Turcios *et al.* (2014). The keywords were extracted from each of the selected research articles, and recorded in a Microsoft Excel spreadsheet, in line with Turcios *et al.* (2014). This method was selected because as Milojević *et al.* (2011) have observed, title words, keywords, and descriptors perform a signalling function – alerting a reader of a text to its content.

3.4. Data Coding

The next stage of the investigation was the coding of the collected data. The titles, abstracts and bodies of the articles were read, and then each assigned a category and subcategory. Each item was only assigned one subject category and one subcategory, in line with other studies such as Aharony

(2011) and Tuomaala *et al.* (2014). If an item has more than one topic, its main topic was identified and it was classified under that category, following Tuomaala *et al.* (2014). The results for the articles were tabled and analysed chronologically by year, and then compared together for an overall view of the literature. Following Naseer and Mahmood (2014), the data was captured and analysed in Microsoft Excel for the topic analysis.

For this study, an existing classificatory framework, Zins' (2007) Classification Scheme of Information Science, was utilized for the coding process. This classification scheme was selected as it incorporates a variety of categories that take account of both the historical and contemporary state of research in the LIS discipline, and allows for a variety of research themes to be included. This latter aspect is essential, as fields evolve theoretically, methodologically, and structurally, and so, too, does language, both the technical jargon associated with a specific area of inquiry, and everyday terminology (Merton, 1968). Zins' (2007) classification scheme includes ten key topic categories, which are further divided into 85 subcategories, representing areas of intellectual and practical inquiry that have, or have had, significance in the field (Larivière *et al.*, 2012). This scheme was adopted in its entirety for this study, in line with Aharony's (2011) and Tuomaala *et al.*'s (2014) studies. Since it was created in 2007, Zins' classification scheme has been utilized 101 times by other researchers, indicating that it has broad interest and recognition, and is a trustworthy classification scheme (Folger *et al.*, 1984).

3.5. Data Analysis

Once the data was collected and categorized, it was analysed. This involved entering the data into tables and graphs according to the classification scheme, and analysing the results. These tables were then replicated within each of the ten years, to provide a comprehensive analysis of the breakdown of the categories.

3.6. Issues of Validity and Reliability

Research studies are typically evaluated using measures of rigour such as validity and reliability. Both are important to ensure that the findings of a study are sound.

3.6.1. Validity

Validity is the "extent to which the research produces an accurate version of the world," (Bloor & Wood, 2006, p. 147). In order for a study to claim validity, the researcher must show that what is being described is accurately 'named' – that the research process has accurately represented a phenomenon which is recognizable to the research community being addressed (Kirk & Miller, 1986;

Lepper, 2000; Weber, 1990). Validity is of special concern in this study because of the dynamic and creative nature of qualitative research, and because of its openness and flexibility (Fidel, 1993) (for studies on validity in content analysis, see Denzin & Lincoln, 1994; Erlandson *et al.*, 1993; Roberts, 2001). Two significant flaws that can occur in content analysis are faulty definitions of categories, and non-mutually exclusive and exhaustive categories (Stemler, 2001).

In order to ensure that the findings are valid, the following strategies were employed:

- **The structural soundness and utility of the classificatory framework was determined.** Dilevko & Gottlieb (2009) recommend that the structural soundness and utility of any sort of *a priori* coding system or classificatory framework should be ascertained prior to use. The classification scheme has been reviewed, as well as its usage in a prior study (Aharony, 2011), and there is confidence that it is sound. Stemler (2001) and Weber (1995) assert that in order to be valid, categories must be mutually exclusive and exhaustive. This occurs when no unit falls between two data points, and each unit is represented by only one data point – where the data language represents all recording units without exception. These requirements are met by Zins' (2007) Classification Scheme.
- **It was ensured that the selected words were a valid measure of the researcher's concept.** To improve validity, a table is included (see Table 1 on page 13), with key words used to show how interpretations are made from the data.
- **It was ensured the data record is complete.** When documents are being assembled for content analysis, it is necessary to ensure that a substantial numbers of documents are not missing, or that any inappropriate records (that do not meet the criteria required for analysis) are discarded (Stemler, 2001). The sample was checked to ensure that it is complete and no records are inappropriate (not meeting the requirements of the sample).
- **The data collection and analysis process was reviewed throughout.** Naseer and Mahmood (2014) recommend regularly reviewing items during the entire process to remove any inconsistencies. This took place during the data collection, coding and analysis stages of research.

3.6.2. Reliability

Reliability is the “extent to which research produces the same results when replicated,” (Bloor & Wood, 2006, p. 147). This means that the findings must be shown to be independent of the circumstances of the research - that the research process would yield the same result if it were repeated (Kirk & Miller, 1986; Lepper, 2000).

While content analysis is considered as a systematic, replicable technique, it can be argued that reliability is an extremely difficult standard to achieve in practice with qualitative research methods, as different researchers will generally always produce different versions of the social world (Berelson, 1952; Bloor & Wood, 2006; Krippendorff, 1980; Stemler, 2001; Weber, 1990).

As such, the following strategies were utilized to improve the reliability of the study:

- **Accurate selection, collection and presentation of data was ensured.** Data was selected, collected and presented in line with the outlines of the initial proposal.
- **Coding categories’ parameters were clearly defined.** Weber (1990) notes, “Reliability problems usually grow out of the ambiguity of word meanings, category definitions, or other coding rules,” (p. 15). Accordingly, it is important to clearly define the parameters of a category (Saxton, 2006). Stemler (2001) asserts that developing a set of explicit recording instructions is one of the most critical steps in content analysis. In order to ensure that the research is reliable, and can therefore be reproduced by other researchers, a table is included with the findings of examples of important keywords that can be found in each article, to differentiate each category from one another. This table can be seen below:

Table 1: Examples of Keywords in Each Category

Category	Examples
Data Organization and Retrieval	<i>Subject headings, indexing, data mining, cataloguing, MARC, classification, controlled vocabulary, description, Dewey Decimal Classification, Library of Congress Classification, RDA, FRBR, metadata, bibliographic records</i>
Diffusion Studies	<i>N/A</i>
Foundations of Information Science	<i>History, biography, theory, model, paradigm, practice, profession, librarianship</i>

Information/Learning Society	<i>Information literacy, skills, training, literacy, learning, teaching, classes, workshop, programme, professional development, education, e-learning, classroom, curriculum, mentoring, professional development, summer reading programme</i>
Information Ethics and Law	<i>Legislation, policy, copyright, access, freedom of information, equity, standards, open access, open source, censorship, freedom of speech, ownership</i>
Information Industry Economics and Management	<i>Management, collection development, building design, processes, workflow, project management, strategy, outsourcing, appraisal, preservation, conservation, knowledge management, planning, implementation, valuation, asset management, selection, exhibition, disaster management, marketing, storage, promotion, acquisitions</i>
Information Technology	<i>Electronic delivery, software, website, digital security, information retrieval, search engine, search tools, federated searching, interface, infrastructure, network, systems analysis, discovery tools, Web 2.0, wiki, internet</i>
Methodology	<i>Survey, questionnaire, service quality, assessment, qualitative, quantitative, research, data, trends, measurement, performance indicators, tool, analysis, results</i>
Social Information Science	<i>Community, engagement, support, biculturalism, bilingualism, multiculturalism, empowerment, demographics, diversity, genealogy, identity</i>
User Studies	<i>Information needs, information seeking behaviour, users, trial, response, views, perceptions, usability testing, accessibility, user needs, expectations, attitudes, information behaviour, research behaviour</i>

- **Thorough records documenting the process of analysis are maintained throughout.** Using a research diary and tables, so that others can follow the process. Weber (1990) observes that “To make valid inferences from the text, it is important that the classification procedure be reliable in the sense of being consistent: Different people should code the same text in the same way,” (p. 12). As such, one person will complete the task for consistent assignment of the categories, in line with Naseer and Mahmood (2014) and Palvia *et al.* (2003). For the

coding, items/articles will be assigned to a subject category and sub-category. An article will only be assigned to one subject category and one subcategory.

3.7. Limitations and Delimitations

As with any study, this project has limitations. This may have implications for research methods and analysis of data during the course of this study. These include:

3.7.1. Limitations

- *Population Size*

Due to the relatively small size of the New Zealand population and its LIS and ARM communities, the population of interest in the study, are comparatively small, and this is reflected in the research literature published through New Zealand channels. International researchers in a variety of disciplines, such as Cornelius (2009), Jacobson (1997) and Moghadam *et al.* (2011) make note of the concept of small country exception in research. Work done in small countries can be tested against international data, in order to identify any exceptions to the general rules found; analysis or theory can then be adjusted or amended accordingly.

- *Single Journal Analysis*

The *NZLIMJ* and *Archifacts* are the only LIS- and ARM-focused research journals published in New Zealand. While there are limitations to only using one research journal from each field for data, Rochester (1995) asserts that the majority of a country's professional research will be published in their core research journals, and Harter & Hooten (1992) assert that the findings from an analysis of a sample of articles from a single journal provide information about the trends or developments of individual journals. Researchers such as Bakri & Willett (2008, 2009), Bonnevie (2003), Coleman (2007), Furner (2009), Harter & Hooten (1992), Lipetz (1999), Nebelong-Bonnevie & Frandsen (2006), Peritz & Bar-Ilan (2002), Tsay (2008) and Wormell (2000) have successfully conducted single-journal investigations, examining aspects such as authorship patterns and referencing behavior, as well as subject analyses.

- *Magnitude of Study*

Due to degree requirements, the study needed to take place over a six-month period. This constrains the overall time that study needed to be completed in, and therefore places a limit on the extent of the study. In addition to this, the study needed to be written in a final report

inside the prescribed word count of 10,000 words. This has had to be taken into account in selecting the scope of the study, and accordingly has led to the restrictions placed on the overall magnitude of the study, and the size of the sample selected.

3.7.2. Delimitations

- *Data Sample*

Only research literature from *NZLIMJ*, *Archifacts*, and the LIANZA and ARANZ conference proceedings made up the data sample to be analysed. Following Aharony (2011), Tuomaala *et al.* (2014) and Turcios *et al.* (2014)'s methods, letters, short notes, reports, meeting abstracts, book reviews and editorial columns, as well as literature published in other journals, popular magazines and newspapers, books, book chapters, reports and theses were not included in the study's sample. While including these various types of popular research would make for a more complete picture of issues within the New Zealand LIS field, and feasibly make the findings generalizable to a large population, it was decided to exclude them, in order to focus exclusively on one specific type of literature, and therefore, reduce the variability in research environments (Trahan, 1993). Content analyses such as Feehan *et al.* (1987); Järvelin and Vakkari (1993); Kumpulainen (1991), Nour (1985) and Pettigrew & McKechnie (2001) all focus exclusively on research articles as their units of analysis. In addition, as Ashcroft & McIvor (2000), Davies (2012), and McNicol & Dalton (2004) have observed, given the speed of developments in the fields, particularly in the areas of new technologies, initial findings of longer projects such as those published in books, may be outdated by the time the final report is published. Academic journals and conference proceedings bring the benefits of research findings to the user and research communities far sooner. They are also an easier commodity to research as they are relatively accessible, and can be more easily restricted to a specific timeframe (Kumpulainen, 1991). As such, Rochester (1995) argues that journal articles and conference proceedings are the main method of reporting research to the professional communities, and that the findings of research such as theses and funded research reports are often published as research journal articles or conference papers. Consequently, Larivière *et al.* (2012) and Nisonger (1999) have observed journal articles and conference proceedings to be the most popular unit of analysis for LIS and ARM researchers. Rosenthal (1979, p. 638) observes "the file drawer problem" – that only published data is available for analysis, and that this research may incur an inherent bias towards certain research topics. However, Glass *et al.* (1981) argue that analysing only material approved by professional bodies ensures the poor quality research is not included, and that sound research will be the target of the study.

- *Domestically Published Research*

It is important to note that a large portion of LIS research and studies are not in fact published in locally-based journals or conferences, but are instead published in overseas or international publications.

- *Single Country Analysis*

New Zealand LIS and ARM professionals, like their counterparts overseas, publish in international journals to gain visibility in the global research arena (Lee & Yang, 2011; Rochester, 1995; Sin, 2006; Wilson *et al.*, 2011). However, the research experience of others countries indicates that examining a specific country's core publication outlets – the ones most consistently published in, and that play an important role in the national LIS discourse in terms of engagement with a profession – is a sound approach (see Uzun, 2002; Wilson *et al.*, 2011). As such, research studies such as Feehan *et al.* (1987), Kumpulainen (1991) and Nour (1985) chose to deliberately exclude internationally published research articles. In addition, looking to international journals may lead to doubling up of published research – research published originally in New Zealand publications and then published in international outlets.

- *Single Researcher Bias*

As categories are being assigned by one person, it is unavoidable in this study that a certain degree of subjectivity will be found. Greater objectivity could have been achieved by having multiple examiners, as in Aharony (2011). However, it was not possible to utilize multiple researchers to assign the categories, and using one researcher is effective at ensuring consistency of coding, as has been the case in other content analyses such as Davies (2012) and Palvia *et al.* (2003). However, in order to overcome this bias, I recruited a volunteer to code a sample of the total data, to ensure inter-rater reliability (IRR).

3.8. Inter-Rater Reliability

As this study utilized only one coder to analyse the data sample, and due to the qualitative nature of the data analysis, it was considered necessary to have an additional volunteer code a sample of the data to ensure inter-rater reliability (IRR). The assessment of IRR provides a way of quantifying the degree of agreement between coders who independently classify a set of objects, and ensures that the data collected in a study are correct representations of the variables measured – something that is especially important in qualitative studies where variability can arise between human observers in

how they interpret research objects (McHugh, 2012). Therefore, it was important to implement guidelines for the secondary coder to reduce the amount of variability in how they interpreted and recorded the data, and accordingly, instructions were provided on coding the sample. Ultimately, it was expected that two coders coding the same objects under the same conditions would achieve a high level of consistency in their scores, with this indicating that the data collected are correct representations of the variables measured, and that there can be confidence in the results of the study - research data is meaningful only when data collectors record data that accurately represents the objects being analysed (McHugh, 2012).

To calculate the IRR, Cohen's Kappa coefficient (κ) was used. It was selected as it is a robust and widely used statistic to assess the extent to which two raters agree over the classification of qualitative features into mutually exclusive categories (Allen & Bennett, 2012; Hallgren, 2012; McHugh, 2012). It is considered a refinement on the traditionally used percentage agreement, in that it was developed to account for chance, or random, agreement, something not taken into account in traditional percent agreement. It can range from -1 to +1, with 0 representing the amount of agreement that can be expected from random chance, and 1 representing perfect agreement (Cohen, 1960; Landis & Koch, 1977; Marston, 2010).

The sample size was 20 research articles, of the overall 762 articles. While this could be considered to be a small sample of the overall data count, selecting a subset of subjects of this size for IRR analysis was deemed the most practical, due to the time and resource constraints of the research project. This allowed fewer overall ratings to be made, and IRR for the subset of objects may be used to generalize to the full sample (Hallgren, 2012). As the objects were all rated by the same two coders, in a fully crossed design, it controls any systematic bias that may be present.

For the sample data, it is concluded that the IRR of this study is sound, as the obtained Kappa of 0.94 for the major categories analysed, and 0.72 for the more specific subcategories, are both greater than the acceptable threshold of 0.70. In addition, the analysis of the major categories falls in the 0.81-1.0 as almost perfect agreement, and the analysis of the subcategories falls in the 0.61 – 0.80 substantial agreement range (Cohen, 1960; Landis & Koch, 1977). It is worth noting that IRR is affected by the fineness of discriminations in the data that coders must make; when coders are required to make finer discriminations, reliability is more difficult to obtain (McHugh, 2012). This is reflected in the lower Kappa for the more specific subcategories than for the broader major categories.

4. Results and Discussion

4.1. Distribution of Literature across Channels

The sample of research literature consisted of 762 research articles and papers. The majority (392, or 51.44 per cent) were LIANZA conference papers. The next largest group was ARANZ conference papers (a total of 206, or 27.04 per cent), followed by *NZLIMJ* articles (90, or 11.81 per cent), and finally *Archifacts* articles (74, or 9.71 per cent). This can be seen represented below:

Table 2: Distribution of Literature across Channels

Journal Name	Number of Articles	Percentage
<i>New Zealand Library and Information Management Journal</i>	90	11.81
<i>Archifacts</i>	74	9.71
<i>LIANZA Conference Proceedings</i>	392	51.44
<i>ARANZ Conference Proceedings</i>	206	27.04
Total	762	100

A visual representation of this data can be seen below:

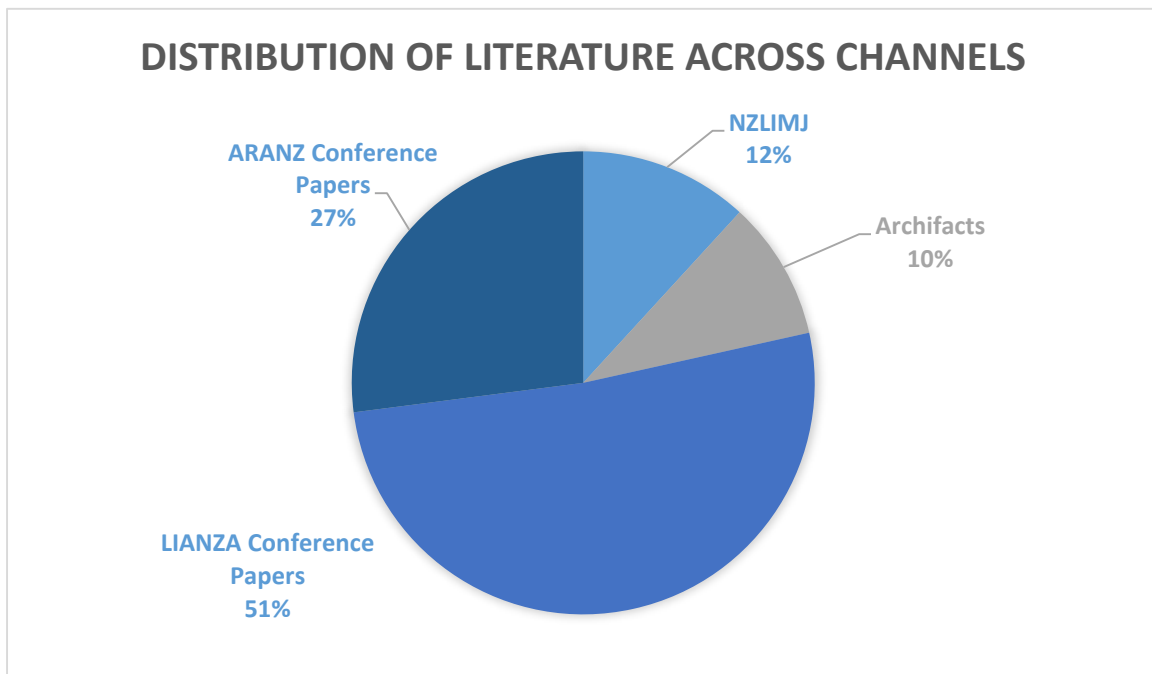


Figure 1: Distribution of Literature across Channels

This can be further broken down into the distribution of articles across channels over time. The numbers fluctuated from year to year, but they largely stayed in roughly the same proportions. The

fluctuations can be attributed to a number of causes, including as part of the industries’ responses to major events (most notably the devastation of the Canterbury earthquakes), which saw smaller conferences that year, and also changing publication patterns of the journals (for example, the 2014 change from a bi-annual to tri-annual publishing of *NZLIMJ*).

Table 3: Distribution of Literature across Channels by Year

Year	NZLIMJ/NZL	Archifacts	LIANZA Conference Proceedings	ARANZ Conference Proceedings	Total Number
2004	9	5	33	10	57
2005	5	6	26	36	73
2006	6	3	39	8	56
2007	10	5	41	21	77
2008	8	5	35	15	63
2009	9	16	33	30	88
2010	9	4	26	23	62
2011	8	9	30	4	51
2012	9	6	24	21	60
2013	4	8	53	N/A	65
2014	13	7	52	38	110
Total	90	74	392	206	762

These trends can be seen below:

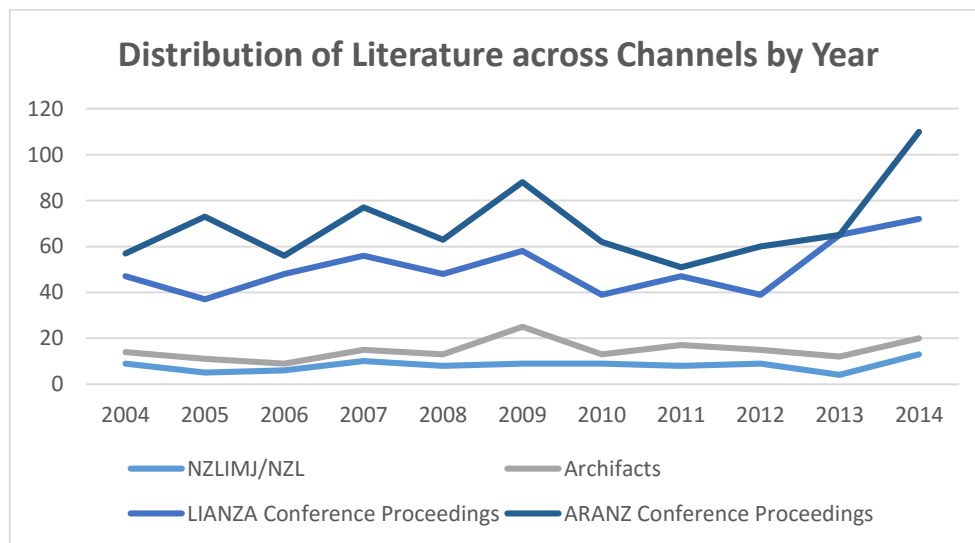


Figure 2: Distribution of Literature across Channels by Year

4.2. Analysis of Subject Trends in Research Literature

Overall, between 2004 and 2014, by far the research topic that was the topic of the most research was Information Industry Economics and Management, with 35 per cent of the overall research articles analysed. This category includes topics such as collection management, databases, information centre and library management, information management and knowledge management (Zins, 2007). The next topic of note was Information/Learning Society, which made up 21 per cent of the research literature. This included such topics as electronic learning, social and cultural aspects of the information society, information literacy, lifelong learning, and Information Science education. On the other end of the spectrum, Diffusion Studies received no research in the literature, and Methodology received just 2 per cent of the research literature.

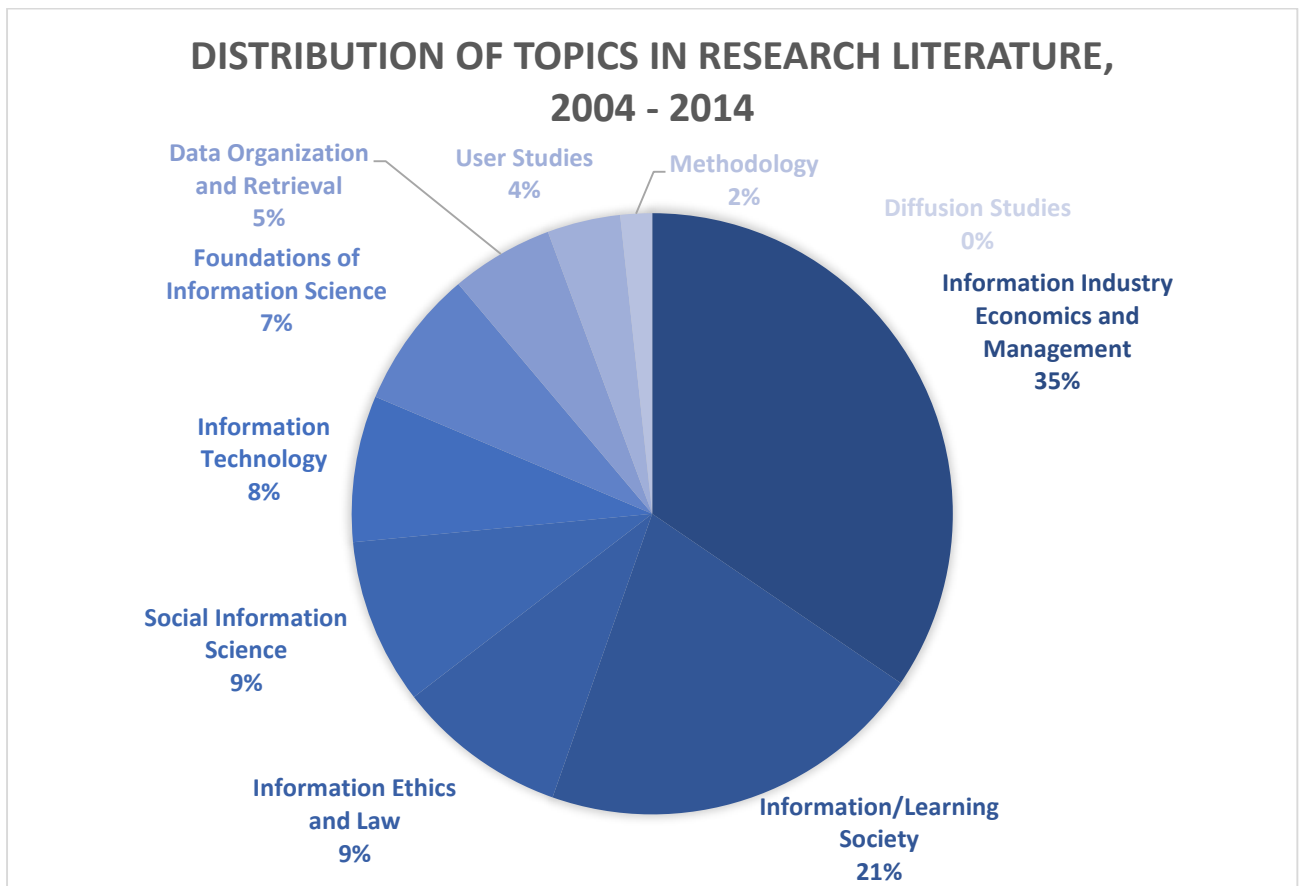


Figure 3: Distribution of Topics in Research Literature, 2004 – 2014

Table 4: Distribution of Topics in Research Literature, 2004 – 2014

Ranking	Category	Frequency	Percentage
1	Information Industry Economics and Management	263	34.51%
2	Information/Learning Society	159	20.87%
3	Information Ethics and Law	70	9.19%
4	Social Information Science	68	8.92%
5	Information Technology	60	7.87%
6	Foundations of Information Science	57	7.48%
7	Data Organization and Retrieval	42	5.51%
8	User Studies	30	3.95%
9	Methodology	13	1.70%
10	Diffusion Studies	0	0.00%
	Total	762	100%

This table is replicated for each of the years in the time period, to provide a comprehensive analysis and comparison of the breakdown of the categories:

Table 5: Distribution of Topics in Research Literature by Year, 2004 – 2014

	Data Organization and Retrieval	Diffusion Studies	Foundations of Information Science	Information/Learning Society	Information Ethics and Law	Information Industry Economics and Management	Information Technology	Methodology	Social Information Science	User Studies
2004	7.00%	0.00%	8.78%	19.30%	1.75%	38.60%	5.26%	0.00%	12.30%	7.00%
2005	5.48%	0.00%	9.59%	20.57%	2.73%	36.99%	2.73%	0.00%	19.18%	2.73%
2006	3.57%	0.00%	3.57%	14.29%	12.50%	30.37%	10.71%	10.71%	7.14%	7.14%
2007	3.90%	0.00%	11.69%	14.28%	14.28%	35.07%	14.28%	2.60%	2.60%	1.30%
2008	9.52%	0.00%	4.76%	9.52%	19.05%	30.16%	4.76%	1.59%	14.29%	6.35%
2009	5.68%	0.00%	7.95%	20.45%	14.77%	26.14%	10.23%	2.28%	11.36%	1.14%
2010	3.23%	0.00%	8.06%	22.58%	8.07%	37.10%	8.06%	0.00%	4.84%	8.06%
2011	5.88%	0.00%	9.81%	25.50%	5.88%	33.33%	5.88%	0.00%	7.84%	5.88%
2012	8.34%	0.00%	6.66%	18.33%	6.67%	40.00%	8.34%	1.66%	8.34%	1.66%
2013	4.61%	0.00%	4.62%	29.23%	4.61%	32.31%	10.77%	1.54%	9.23%	3.08%
2014	4.54%	0.00%	6.35%	30.00%	8.17%	39.08%	5.45%	0.00%	3.63%	2.78%

The research literature was and compared against each other to analyse trends over time.

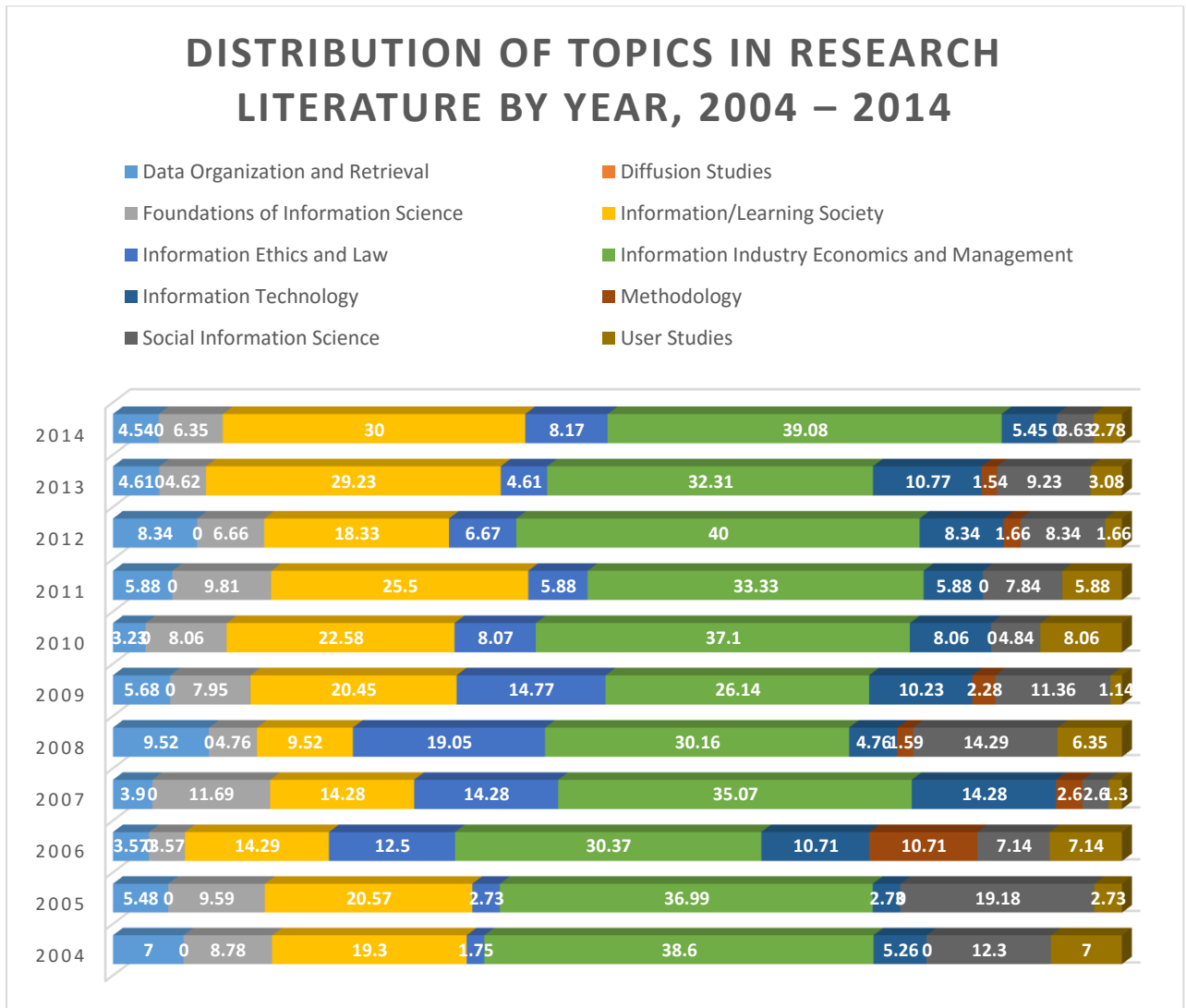


Figure 4: Distribution of Topics in Research Literature by Year, 2004 – 2014

Information Industry Economics and Management and Information/Learning Society, respectively, were consistently the first and second most researched topics in each year. Equally, Diffusion Studies were not topics that were the subjects of any New Zealand research literature, and Methodology was also a research area that was little studied (2 per cent of the overall, and between 0 and 2.6 per cent each year, with the exception of one spike to 10.71 per cent in 2006). There is significantly less theoretical or philosophical research in the areas. This can be observed in the lack of research conducted on theoretical underpinnings of the discipline. This reflects the findings of Tuomaala *et al.* (2014) who have observed that since 1985, there has been a decrease in research on methodological research in wider international LIS research literature, and Bakker (1998), whose subject analysis of

New Zealand ARM literature identified a need for more research and discussion on theories, principles and concepts underpinning the profession.

The topic of User Studies (including subcategories such as user information needs and information behaviors) has fluctuated from year to year, but has overall experienced a decline from 2004 to 2014. This was found to be interesting, as in international literature, user studies have experienced growth in recent decades (Bronstein, 2007; McBain *et al.*, 2013; Basefsky, 1999; Coutts, 1997). However, results of this study may be due to the comparatively narrow range of the subjects within the category, and the interest in research literature in other similar research topics that also have a strong user focus, such as Information/Learning Society topics such as information literacy and lifelong learning. Likewise, the topic of Social Information Science (including subcategories such as the information needs of different cultures, power and ethics, and community information) has also slightly declined overall from 2004 to 2014, and this can largely be attributed to similar reasons.

The topic of Information Technology, which includes such topics as website construction, systems analysis, search tools, information retrieval system and document delivery systems, has slightly increased from 2004 to 2004. However, while there was a slight increase, it was not in line with the significant increase observed earlier in international literature, by researchers such as Ashcroft and McIvor (2000) and Saracevic (1999). This can be partially explained by the analysis process – that as each article was only placed into one category, it was possible to miss other trends occurring - for example, over time it was observed that while Information Industry Economics and Management and Information/Learning Society were consistently the most dominant research themes, the subjects of these papers changed. For example, Willemse's (2014) research on librarians' mentoring relationships, and the role that social media had played in these relationships - the tensions between traditional and new, informal forms of mentoring, and the use of social media to identify mentors (Willemse, 2014). This is an issue that international researchers have also observed in their analyses – a dynamic change in the research themes, from traditional single-subject areas to complex subject areas - strong diversification, including a variety of neighbouring subject areas (Kim and Lee, 2008; Menne-Haritz, 2004).

The topic of Information Ethics and Law, which includes such topics as censorship, copyright, free access to information and information policies, has experienced overall growth from 2004 to 2014. This can be seen in technological developments and the resulting ethical and legal issues resulting from them which have been of interest to information professionals, most notably copyright and open

access issues associated with digital resources, and legislation passed in New Zealand during this time that has affected the information industry, such as the Public Records Act 2005, the Privacy Amendment Acts 2005, 2006, 2007, 2009, 2011 and 2013, the Copyright (New Technologies) Amendment Act 2008 and Copyright Amendment Acts 2005 and 2011. The Public Records Act 2005 introduced a new recordkeeping framework, and has significant impact for ARM professionals. This can be seen in literature such as Stewart's (2008) research on the interrelationship between the Public Records Act and the Privacy Act, and Thompson's (2012) research on legislative requirements to destroy records that supersede. In addition, research such as Staincliffe's (2006) work on the implications of copyright policies in the digital environment, and Cheer's (2009) work on copyright law in the New Zealand context also demonstrate the concerns of information professionals regarding copyright laws in the evolving digital environment.

The topic of Foundations of Information Science, which includes such topics as archival science, the history of information science, information science as a profession, and the history of institutions and professionals, has experienced a slight decline in recent years. There have been some occasions that have arisen during the research period, such as the WW100, which has encouraged historical research in the field. However, overall the findings reflect international research, such as Ellis' (2012) analysis of literature in the United Kingdom, which found that there has been declining research interest in historical research into the profession.

The topic of Data Organization and Retrieval, which includes topics such as classification schemes, indexing, metadata, and vocabulary control, has also experienced decline during the period analysed. This reflects a shift which has been observed in international literature – that while in early years of the discipline, specific archives- and library-oriented activities such as appraisal, cataloguing, classification, and preservation were frequently researched, there has been a shift away from the traditional archives- and library-focused approach (Brichford, 1988; Bronstein, 2007; McBain *et al.*, 2013; Basefsky, 1999; Coutts, 1997; Cox, 1987; Gilliland-Swetland, 1992; Stephens, 1998; and Vakkari, 1994).

It was also notable that there were clusters of research - for example, when an issue of a journal, or a conference had a specific theme, such as ARANZ's 2008 conference, 'Collaborating towards a networked future', which emphasised the role of the internet, email and digitisation in archival work. This may have resulted in skews in the data. However, most conferences had broad themes that encouraged a variety of research topics. The impact of specific events on research outputs can also

be observed - most notably, the devastating 2010 and 2011 Canterbury earthquakes and their aftermath. This raised issues such as disaster preparedness and response for LIS and ARM services after major natural disasters, and in the aftermath, gave researchers the opportunity to reconsider traditional ideas of LIS and ARM services in the creation of new spaces in Canterbury. For example, Fox's (2014) research on Christchurch user perceptions of design and Annan and Thompson's (2013) case study three of central Christchurch's post-earthquake library projects. Another issue that was the subject of research attention was and the 2010 amalgamation of Auckland's seven city and district councils into the one 'Super City', and resulting amalgamation of Auckland libraries. The implications for the affected libraries and their staff was covered by a number of researchers, include Dobbie *et al.*'s (2013) examination of knowledge management within the new Auckland Libraries, Daley's (2014) fiction genre labelling project to manage a collection that was now shared across 55 libraries across Auckland, and Lahatte *et al.*'s (2010) research into the libraries' MyCard project, and its resulting logistical challenges. These support Ryan and Lomas (2007) observation that practitioners can have a preference to present research that shares an experience of a project of local applicability.

Ultimately, the findings reflect the different academic and professional cultures between New Zealand and overseas. New Zealand LIS and ARM literature demonstrates an interest in issues that affect information centres and information professionals in a practical sense - for example, collection management, information centre and library management, and information literacy were topics that were consistently researched throughout the time period analysed. Case studies were also most frequently the chosen mode of research - it was observed that case studies reporting on projects within a specific setting were frequently reported. This supports previous findings that in New Zealand, research is typically undertaken to meet a present need, or to provide answers and directions likely to affect library operations, and that applied research that addresses operational concerns most satisfies the requirements of New Zealand LIS professionals – for example, to support operational activities such as decision making, problem solving, planning and evaluation (Finnie *et al.*, 2000; King, 2011; Turner, 2002). This is also reflected in international literature, which has observed researchers are consistently predominantly interested in practical issues that face the profession (Blessinger and Frasier, 2007; McNicol and Dalton, 2000; Woods and Booth, 2013). However, within this, there has been observed a shift in research from investigating elements such as cataloguing and reference work, to investigating information service delivery, developing systems for end users and supporting them to become information literate (González-Alcaide *et al.*, 2008; Hjørland, 2002; Koufogiannakis *et al.*, 2004; Larivière *et al.*, 2012; Tuomaala *et al.* 2014; Vakkari, 1994; Zhao & Strotmann, 2008).

6. Conclusions

This study endeavoured to provide a categorised analysis of subject trends in LIS and ARM research literature produced in New Zealand between 2004 and 2014. It was found that the topics consistently receiving the most attention were Information Industry Economics and Management and Information/Learning Society, on topics such as collection management, information center and library management, information literacy and social and cultural aspects of the information society. Conversely, the topics receiving the least attention in New Zealand published LIS and ARM research from 2004 to 2014 are Diffusion Studies, which did not receive any research attention, and Methodology, which consistently received very low research attention. These topics included communication and message theory, quantitative and qualitative research and bibliometrics. There were also several other observable changes in the topics of research focus in the literature, with a decline in the topics of Data Organization and Retrieval, Foundations of Information Science, Social Information Science and User Studies, and an increase in Information Ethics and Law, Information Technology. Overall, there is significantly less theoretical or philosophical research in the New Zealand research literature, which can be observed in the lack of research conducted on theoretical underpinnings of the discipline. Instead, there is a strong focus on practical research topics, or case studies of projects undertaken in institutions.

While this study was intended to provide a subject analysis of LIS and ARM research literature published in New Zealand, but is by no means exhaustive. Researchers such Onyancha & Ocholla (2004) and Onyancha (2008) have observed the preference of authors in small or developing countries to publish in foreign or international journals, largely due to these journals' perceived increased recognition, and higher potential for citations. Therefore, possible future research could examine New Zealand LIS and ARM researchers' published research in international publications or conferences. In addition, researchers in other countries can also use this study to conduct similar studies to explore research literature trends in their own setting, which will add to the existing international LIS body of knowledge.

Word count: 9,983 words

References

- Abrizah, A., Zainab, A.N., Kiran, K. & Raj, R.G. (2013). LIS journals scientific impact and subject categorization: a comparison between Web of Science and Scopus. *Scientometrics*, 94, 721-740.
- Aharony, N. (2009). Librarians and information scientists in the blogosphere: An exploratory analysis. *Library & Information Science Research*, 31(3), 174-181.
- Aharony, N. (2011). Library and information science research areas: A content analysis of articles from the top 10 journals 2007-8. *Journal of Librarianship and Information Science*, 44(1), 27-35.
- Aina, I.O. & Mooko, N.P. (1999). Research and publication patterns in Library and Information Science. *Information Development*, 15(2), 114-119.
- Allen, P. & Bennett, K. (2012) *SPSS statistics: A practical guide, version 20*. Melbourne: Cengage Learning.
- Archives and Records Association of New Zealand (ARANZ). (2009). *About ARANZ*. Retrieved from http://www.aranz.org.nz/Site/about_ARANZ/default.aspx
- Archives and Records Association of New Zealand (ARANZ). (2015). *Membership Reports*. Retrieved from <http://www.aranz.org.nz/includes/download.aspx?ID=140755>
- Arredondo, P., Rosen, D.C., Rice, T., Perez, P. & Tovar-Gamero, Z. (2005). Multicultural counselling: A 10-year content analysis of *The Journal of Counselling and Development*. *Journal of Counselling and Development*, 83(2), 155-161.
- Ashcroft, L. & Mclvor, S. (2000). LIS research and publishing: The forces of change. *Library Review*, 49(9), 461-468.
- Asirvatham, A.P. & Kranthi Kumar, R. (2001). *Web page categorization based on document structure*. Retrieved from http://www.cs.utah.edu/~arul/papers/web_page_classification.pdf

Åström, F. (2002). Visualizing library and information science concept spaces through keyword and citation based maps and clusters. In H. Bruce, R. Fidel, P. Ingwersen, & P. Vakkari (Eds.). *Emerging frameworks and methods: Proceedings of the Fourth International Conference on Conceptions of Library and Information Science (CoLIS4)* (pp. 185–197). Greenwood Village, CO: Libraries Unlimited.

Atkins, S.E. (1988). Subject trends in library and information science research, 1975-1984. *Library Trends*, 36(4), 633-658.

Attardi, G., Gulli, A. & Sebastiani, F. (1999). Automatic web page categorization by link and context analysis. Retrieved from <http://www.di.unipi.it/~attardi/Paper/THAI-ETIS.pdf>

Avison, D.E., Dwivedi, Y.K., Fitzgerald, G. & Powell, P. (2008). The beginnings of a new era: Time to reflect on 17 years of the ISJ. *Information Systems Journal*, 18(1), 5-21.

Bakker, N.A. (1998). *A content analysis of archival research 1977-1996 in the journal 'Archifacts'* (Unpublished master's dissertation). Victoria University of Wellington, Wellington, New Zealand.

Bakri, A., & Willett, P. (2008). The Malaysian Journal of Library and Information Science 2001–2006: A bibliometric study. *Malaysian Journal of Library & Information Science*, 13(1), 103–116.

Bakri, A., & Willett, P. (2009). The Malaysian Journal of Computer Science: A bibliometric study. *Malaysian Journal of Library & Information Science*, 14(2), 39–49.

Bangert-Drowns, R.L. (1984). *Developments in meta-analysis: A review of five methods*. Ann Arbor, MI: Michigan University Centre of Research on Learning and Teaching.

Basefsky, S. (1999). The library as an agent of change: Pushing the client institution forward. *Information Outlook*, 37(4), 3-8.

Belkin, N.J. (1990). The cognitive viewpoint in information science. *Journal of Information Science*, 16(1), 11-15.

Biggs, M. (1991). The role of research in the development of a profession or a discipline. In C.R. McClure & P. Herson (Eds.). *Library and information science research: Perspectives and strategies for improvement* (pp. 72-84). Norwood, NJ: Ablex.

Blessinger, K. & Fraser, M. (2007). Analysis of a decade in library literature: 1994 – 2004. *College & Research Libraries*, 68(2), 155-170.

Bloor, M. & Wood, F. (2006). *Keywords in qualitative methods: A vocabulary of research concepts*. London: Sage.

Boholm, M. (2013). Political representations of nano in Swedish government documents. *Science and Public Policy*, 1-22.

Bonnevie, E. (2003). A multifaceted portrait of a library and information science journal: The case of the Journal of Information Science. *Journal of Information Science*, 29(1), 11–23.

Bradley, F. (2008). Writing for the profession: The experience of new professionals. *Library Management*, 29(8/9), 729-745.

Bronstein, J. (2007). Current trends in library and information studies curricula around the world: Looking for the user-centred approach. *Journal of Information, Communication and Ethics in Society*, 5(2/3), 59-78.

Buckland, M.K. (1986). Education for librarianship in the next century. *Library Trends*, 34(4), 777-788.

Budd, J. (2006). Discourse analysis and the study of communication in LIS. *Library Trends*, 55(1), 65-82.

Busha, C.H. and Harter, S.P. (1980). *Research methods in librarianship: Techniques and interpretation*. New York, NY: Academic Press.

Buttler, L. (1991). Analyzing the library periodical literature: Content and authorship. *College & Research Libraries*, 52(1), 38-53.

- Calvert, P.J. (2014). *Research SIG: Annual Report 2013 – 2014*. Retrieved from <http://www.lianza.org.nz/sites/default/files/Research%20SIG%20Annual%20Report%202014%20final.pdf>
- Calvert, P.J. & Cullen, R.J. (1996). Research in library and information science in New Zealand. *Library Management*, 17(5), 36-41.
- Cavanagh, S. (1997). Content analysis: Concepts, methods and applications. *Nurse Researcher*, 4(3), 5-16.
- Chawner, B. (2013, 20-23 October). *Flowing and changing over time: Reshaping postgraduate information studies qualifications to meet future needs*. LIANZA 2013 Conference: Wai-Ora, Wai-Maori, Waikato.
- Cheer, U. (2009, 12-14 October). *Balanced copyright would be nice*. Paper presented at LIANZA 2009 Conference: He Tangata, He Tangata, He Tangata.
- Childers, T. (1990). Evaluative research in the library and information field. *Library Trends*, 38, 250-267.
- Claver, E., González, R. & Lopis, J. (2000). An analysis of research in information systems (1981-1997). *Information & Management*, 37(4), 181-195.
- Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement*, 20, 37-46.
- Cole, F.L. (1988). Content analysis: Process and application. *Clinical Nurse Specialist*, 2(1), 53-57.
- Coleman, A. (2007). Assessing the value of a journal beyond the impact factor. *Journal of the American Society for Information Science & Technology*, 58(8), 1148–1161.
- Cornelius, I. (1997). Research as practice. In Beaulieu, M., Davenport, E., & Pors, N.O. (Eds.). *Library & information studies: Research and professional practice*. Proceedings of the 2nd British-Nordic

Conference on Library & Information Studies, Edinburgh 24-26 March 1997. London: Taylor Graham: 243-248.

Cornelius, I. (2009). Island research: LIS in Ireland. *Aslib Proceedings*, 61(3), 1.

Cossham, A. (2013). Bibliographic records in an online environment. *Information Research*, 18(3), paper C42. Retrieved from <http://www.informationr.net/ir/18-3/colis/paperC42.html>

Cossham, A., Wellstead, P., & Welland, S. (2014). LIS Undergraduate Education in New Zealand: Development and Contemporary Issues. In J. Du, Q. Zhu, & A. Koronios (Eds.) *Library and Information Science Research in Asia-Oceania: Theory and Practice* (pp. 225-243). Hershey, PA.

Coutts, B.E. (1997). The reference revolution: Wired for the 90s. *Library Journal*, 122(19), 8-11.

Couture, C. & Doucharme, D. (2005). Research in archival science: A status report. *Archivaria*, 59, 41-67.

Cox, R. J. (1987). American archival literature: Expanding horizons and continuing needs 1901-1987. *American Archivist*, 50(1), 306-23.

Cronin, B. & Meho, L.I. (2008). The shifting balance of intellectual trade in information studies. *Journal of the American Society for Information Science and Technology*, 59(4), 55-564.

Daley, G. (2014, August 21). *Fiction labels that anyone can understand: Turning integration into innovation*. Paper presented at the LIANZA 2014 Conference: Connect and Thrive.

Davarpanah, M.R. & Asleki, S. (2008). A scientometric analysis of international LIS journals: Productivity and characteristics. *Scientometrics*, 77(1), 21-39.

Davies, K. (2012). Content analysis of research articles in information systems (LIS) journals. *Library & Information Research*, 36(112), 16-28.

- Delgado-Romero, E.A., Galvan, N., Maschino, P. & Rowland, M. (2005). Race and ethnicity in empirical counselling and counselling psychology research: A 10-year review. *The Counselling Psychologist*, 33, 419-448.
- Denzin, N.K. (1989). Strategies of multiple triangulation. In N.K. Denzin (Ed.). *The research act: A theoretical introduction to sociological methods (3rd edition)* (pp. 234-247). Englewood Cliffs, N.J.: Prentice-Hall.
- Dilevko, J. & Gottlieb, L. (2009). The relevance of classification theory to textual analysis. *Library & Information Science Research*, 31, 92-100.
- Dobbie, A. (2013, September 23-26). *Getting the word out – internal communications and culture change at Auckland Libraries*. Paper presented at the LIANZA 2013 Conference: Celebrate, Sustain, Transform.
- Downe-Wamboldt, B. (1992). Content analysis: Method, applications and issues. *Health Care for Women International*, 13(3), 313-231.
- Du, J. T., Zhu, Q., & Koronios, A. (2014). Overview of Theory and Practice in Library and Information Science Research in Asia-Oceania. In J. Du, Q. Zhu, & A. Koronios (Eds.) *Library and Information Science Research in Asia-Oceania: Theory and Practice* (pp. 1-6). Hershey, PA:
- Duncan, D.F. (1989). Content analysis in health education research: An introduction to process and methods. *Health Education*, 20(7), 27-31.
- Ellis, D. (2012). Research assessment and the shaping of library and information research in the United Kingdom. In A. Spink & J. Heinström (Eds.) *Library and Information Science Trends and Research: Europe* (pp. 143-165).
- Elo, S. & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107-115.
- Fairclough, N. (2003). *Analyzing discourse: Textual analysis for social research*. London: Routledge.

Feather, J. (2009). LIS research in the United Kingdom: Reflections and prospects. *Journal of Librarianship and Information Science*, 41(3), 173-181.

Feehan, P.E., Gragg, W.L., Havener, W.M. & Kester, D.D. (1987). Library and information science research: An analysis of the 1984 journal literature. *Library & Information Science Research*, 9, 173-185.

Fidel, R. (1984). The case-study method: A case study. *Library & Information Science Research*, 6, 273-288.

Fidel, R. (1993). Qualitative methods in information retrieval research. *LISR*, 15, 219-247.

Fields, A. J. (2010). Addendum: New Zealand Libraries and the New Zealand Library and Information Management Journal 1997-2010. *New Zealand Library & Information Management Journal*, 52(1), 20-23.

Finnie, E., Frame, B. and Stewart, I. (2000). Research by New Zealand library practitioners. *New Zealand Libraries*, 49(3), 83-87.

Folger, J.P., Hewes, D.E., & Poole, M.S. (1984). Coding social interaction. In B. Dervin & M.J. Voigt (Eds.). *Progress in communication sciences* (pp. 115-161). Norwood, NJ: Ablex.

Frame, B. (1999). Why *New Zealand Libraries*? *New Zealand Libraries*, 49(1), 2.

Frame, B. (2004). Editorial. *New Zealand Libraries*, 49(10), 334.

Furner, J. (2009). Forty years of the *Journal of Librarianship and Information Science*: A quantitative analysis, Part I. *Journal of Librarianship and Information Science*, 41(2), 149–172.

Gephart, R.P. (1988). *Ethnostatistics: Qualitative foundations for quantitative research. (Qualitative Research Methods Series No. 12)*. Newbury Park, CA: Sage.

Gilliland, A. & McKemmish, S. (2004). Building an infrastructure for archival research. *Archival Science*, 4(3/4), 143-199.

Gingras, Y. & Larivière, V. (2010). The historical evolution of interdisciplinarity: 1900–2008. Retrieved from http://crc.ebsi.umontreal.ca/publications/gingras_lariviere_leiden.pdf

Glass, G.V., McGaw, B. & Smith, M.L. (1981). *Meta-analysis in social research*. Beverly Hills, CA: Sage.

González-Alcaide, G., Castelló-Cogollos, L., Navarro-Molina, C., Aleixandre-Benavent, R. & Valderrama-Zurián, J.C. (2008). Library and information science research areas: Analysis of journal articles in LISA. *Journal of the American Society for Information Science and Technology*, 59(1), 150-541.

González-Teruel, A. & Abad García, M.F. (2007). Information needs and uses: An analysis of the literature published in Spain, 1990 – 2004. *Library & Information Science Research*, 29, 30-46.

Gow, V. (2013, 20-23 October). *Commemorating the centenary of the First World War: The role of Libraries*. Paper presented at the LIANZA 2013 Conference.

Gwet, K.L. (2014). *Handbook of inter-rater reliability: The definitive guide to measuring the extent of agreement among raters (4th ed.)*. Gaithersburg, MD: Advanced Analytics, LLC.

Haddow, G. & Klobas, J.E. (2004). Communication of research to practice in library and information science: Closing the gap. *Library & Information Science Research*, 26(1), 29-43.

Hall, H. (2010). Promoting the priorities of practitioner research engagement. *Journal of Librarianship and Information Science*, 42(2), 83-88.

Hall, H. (2011). UK library and information science research matters. *Library & Information Science Research*, 33, 89-91.

Hallgren, K.A. (2012). Computing inter-rater reliability for observational data: An overview and tutorial. *Tutorials in Quantitative Methods for Psychology*, 8(1), 23-24.

Ham, F.G. (1994). *Towards career professionalization: An education programme for New Zealand archivists and record managers*. Wellington, NZ: Archives and Records Association of New Zealand.

Harter, S.P., & Hooten, P.A. (1992). Information science and scientists — JASIS, 1972–1990. *Journal of the American Society for Information Science*, 43(9), 583–593.

Hernon, P. (1989). *Statistics for library decision-making: A handbook*. Norwood, NJ: Ablex.

Hider, P. & Pymm, B. (2008). Empirical research methods report in high-profile LIS journal literature. *Library & Information Science Research*, 30, 108-114.

Hjørland, B. (2000). Library and information science: Practice, theory, and philosophical basis. *Information Processing & Management*, 36(3), 501-531.

Hsieh, H.F. & Shannon, S.E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277-1288.

Hsu, F.M., Lin, C.M. & Fang, C.T. (2015). *The trend and intellectual structure of digital archives research*. PACIS 2015 Proceedings. Retrieved from <http://aisel.aisnet.org/pacis2015/128>

Hu, C.P., Hu, J.M., Gao, Y., & Zhang, Y.K. (2011). A journal co-citation analysis of library and information science in China. *Scientometrics*, 86(3), 657–670.

Huang, M.H., & Lin, C.S. (2011). A citation analysis of Western journals cited in Taiwan's Library and Information Science and History research journals: From a research evaluation perspective. *Journal of Academic Librarianship*, 37(1), 34–45.

Ingwersen, P. (1992). Information and information science in context. *Libri*, 42(2), 99-135.

Jacobson, D.M. (1997). The EU merger regulations: Restrictions or promotion. *Multinational Business Review*, 5(1), 38-45.

Janssens, F., Leta, J., Glänzel, W., & De Moor, B. (2006). Towards mapping library and information science. *Information Processing & Management*, 42(6), 1614–1642.

- Järvelin, K. & Vakkari, P. (1990). Content analysis of research articles in library and information science. *Library & Information Science Research*, 12, 395-421.
- Järvelin, K. & Vakkari, P. (1993). The evolution of library and information science 1965-1985: A content analysis of journal articles. *Information Processing & Management*, 29(1), 129-144.
- Julien, H., Pecoskie, J.L. & Reed, K. (2011). Trends in information behaviour research, 1999 – 2008: A content analysis. *Library & Information Science Research*, 33, 19-24.
- Keakopa, M. (2009). A critical review of the literature on electronic records management in the ESARBICA region. *ESARBICA Journal*, 28, 78-104.
- Khoo, C. S. G., Majid, S., & Lin, C. P. (2009). Asia: LIS education. In I. Abdullahi (Ed.), *Global library and information science. A textbook for students and educators* (pp. 194-220). Munich: K.G. Saur.
- Kim, H. & Lee, J. Y. (2008). Exploring the emerging intellectual structure of archival studies using text mining: 2001-2004. *Journal of Information Science*, 34(3), 356-369.
- Kim, H. & Lee, J.Y. (2009). Archiving research trends in LIS domain using profiling analysis. *Scientometrics*, 80(1), 77-92.
- King, A. (2011, 29 October – 2 November). *New Zealand librarians' decision-making and open access research*. Paper presented at LIANZA 2011 Conference: Passion, People and Power.
- Kirk, J. & Miller, M.L. (1986). *Reliability and validity in qualitative research*. London: Sage.
- Klobas, J.E. & Clyde, L.A. (2010). Beliefs, attitudes and perceptions about research and practice in a professional field. *Library & Information Science Research*, 32(4), 237-245.
- Koufogiannakis, D., Slater, L. & Crumley, E. (2004). A content analysis of librarianship research. *Journal of Information Science*, 30(3), pp. 227–239.
- Krippendorff, K. (1980). *Content Analysis: An Introduction to its Methodology*. Newbury Park, CA: Sage.

Krippendorff, K. (2014). *Content analysis: An introduction to its methodology*. London: Sage.

Kuhn, T.S. (1962). *The structure of scientific revolutions*. Chicago, IL: University of Chicago Press.

Kumpulainen, S. (1991). Library and information science research in 1975: Content analysis of the journal articles. *Libri*, 41(1), 59-76.

Kyngäs, H. & Vanhanen, L. (1999). Content analysis as a research method. *Hoitotiede*, 11, 3-12.

Lahatte, L., Haines, C. & Taylor, J. (2010). *One City Auckland Libraries. The story so far: MyCard project and logistics*. Paper presented at the LIANZA 2010 Centennial Conference: At the Edge.

Landis, J.R & Koch, G.G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33(1), 159-174.

Larivière, V., Sugimoto, C. R. & Cronin, B. (2012). A bibliometric chronicling of library and information science's first hundred years. *Journal of the American Society for Information Science and Technology*, 63(5), 997–1016.

Lee, J.W. & Yang, K.D. (2011). A bibliometric study of library and information science research in Korea. *Journal of the Korean Society for Library and Information Science*, 45(4), 53-76.

Lepper, G. (2000). Analysing text. In G. Lepper (Ed.), *Categories in text and talk* (pp. 76-85). London: SAGE.

LIANZA. (2015a). *Annual report*. Retrieved from <http://www.lianza.org.nz/sites/default/files/Annual%20Report%202014%20-%202015.pdf>

LIANZA. (2015b). *Research SIG: New Zealand library and information science research*. Retrieved from <http://www.lianza.org.nz/research-sig>

LIANZA. (2015c). *Taking libraries to 2025: The future of libraries report*. Retrieved from <http://lianza.org.nz/taking-libraries-2025-future-libraries-report>

Lipetz, B.A. (1999). Aspects of JASIS authorship through five decades. *Journal of the American Society for Information Science*, 50(11), 994–1003.

Logan, E. & Hsieh-Yee, I. (2001). Library and information science education in the nineties. *Annual Review of Information Science and Technology*, 35, 425-477.

Lord, F.M. (1959). Statistical inferences about true scores. *Psychometrika*, 24(1), 1-17.

Luo, L. (2011). Fusing research into practice: the role of research methods education. *Library & Information Science Research*, 33, 191-201.

Marston, L. (2010). *Introductory statistics for health and nursing using SPSS*. Thousand Oaks, CA: Sage.

McBain, I., Culshaw, H. & Walkley Hall, E. (2013). Establishing a culture of research practice in an academic library: An Australian case study. *Library Management*, 34(6/7), 448 – 461.

McCausland, S. (2011). A future without mediation? Online access, archivists, and the future of archival research. *Australian Academic and Research Libraries*, 42(4), 309-319.

McClure, C.R. & Bishop, A. (1989). The status of research in library/information science: Guarded optimism. *College & Research Libraries*, 50, 127-143.

McHugh, M.L. (2012). Interrater reliability: The Kappa statistic. *Biochemia Media*, 22(3), 276-282.

McNicol, S. & Dalton, P. (2004). Striking a balance: Priorities for research in LIS. *Library Review*, 53(3), 167-176.

Mellon, C.A. (1990). *Naturalistic inquiry for library science: Methods and applications for research, evaluation and teaching*. New York: Greenwood Press.

Menne-Haritz, A. (2004). *Business processes: An archival science approach to collaborative decision making, records, and knowledge management*. Dordrecht, Netherlands: Kluwer Academic.

Merton, R.K. (1968). *Social theory and social structure*. New York: Free Press.

Milojević, S., Sugimoto, C.R., Yan, E., & Ding, Y. (2011). The cognitive structure of library and information science: Analysis of article title words. *Journal of the American Society for Information Science and Technology*, 62(10), 1933–1953.

Moghadam, R., Cottarelli, C. & Ostry, J. (2011). *Managing volatility: A vulnerability exercise for low-income countries*. Retrieved from <https://www.imf.org/external/np/pp/eng/2011/030911.pdf>

Morgan, D.L. (1993). Qualitative content analysis: A guide to paths not taken. *Qualitative Health Research*, 3, 112-121.

Naseer, M.M. & Mahmood, K. (2014). Subject dispersion of LIS research in Pakistan. *Library & Information Science Research*, 36, 114-119.

National Library of New Zealand. (2007). New generation National Library: Strategic directions to 2017. Retrieved from http://natlib.govt.nz/files/strategy/Strategic_Directions_to_2017.pdf.

Nebelong-Bonnevie, E., & Frandsen, T.F. (2006). Journal citation identity and journal citation image: A portrait of the Journal of Documentation. *Journal of Documentation*, 61(1), 30–57.

Neuendorf, K.A. (2002). *The content analysis guidebook*. Thousand Oaks, CA: Sage.

New Zealand Association of Public Library Managers. (2012). *Public Libraries of New Zealand: A Strategic Framework 2012-2015*. Retrieved from http://www.publiclibraries.co.nz/wp-content/uploads/2014/01/NZ_Public_Libraries_Strategic_Framework.pdf

Ngope, M., Malueka, J & Onyancha, O.B. (2014). Research collaboration in the Archives and Records Management field across and beyond universities in Africa: An informetric analysis. *Mousaion*, 31(3), 119-136.

Nisonger, T.E. (1999). JASIS and library and information science journal rankings: A review and analysis of the last half-century. *Journal of the American Society for Information Science*, 50(11), 1004–1019.

Nour, M. M. (1985). A quantitative analysis of the research articles published in core library journals of 1980. *Library and Information Science Research*, 7(3), 261-273.

Novick, M.R. (1966). The axioms and principle results of classical test theory. *Journal of Mathematical Psychology*, 3, 1-18.

Onyancha, O.B. (2008). Growth, productivity, and scientific impact of sources of HIV/AIDS research information, with a focus on Eastern and Southern Africa. *African Journal of AIDS Research*, 7(1), 55-70.

Onyancha, O.B., Ngoepe, M. & Maluleka, J. (2015). Trends, patterns, challenges and types of archival research in sub-Saharan Africa. *African Journal of Library, Archives and Information Science*, 25(2), 145-159.

Onyancha, O.B. & Ocholla, D. (2004). An informetric analysis of the corruption literature based on Africa between 1990 and 2001. *South African Journal of Libraries and Information Science*, 70(2), 86-98.

Palvia, P., Mao, E., Salam, A.F. & Soliman, K.S. (2003). Management information systems research: What's there in a methodology? *Communications of the Association for Information Systems*, 14(24), 526-42.

Palvia, P. & Pinjani, P. (2007). A profile of information systems research publishes in Information & Management. *Information & Management*, 44(1), 1-11.

Peritz, B.C. (1980). The methods of library science research: Some results from a bibliometric survey. *Library Research*, 2(3), 251-268.

Peritz, B.C., & Bar-Ilan, J. (2002). The sources used by bibliometrics-scientometrics as reflected in references. *Scientometrics*, 54(2), 269–284.

Pettigrew, K.E. & McKechnie, L. (2001). The use of theory in information science research. *Journal of the American Society for Information Science and Technology*, 52(1), 62-73.

Powell, R.R. (1997). *Basic research methods for librarians (3rd edition)*. Greenwich, CT: Ablex Publishing.

Powell, R., Baker, L. & Mika, J. (2002). Library and information science practitioners and research. *Library & Information Science Research*, 24, 49-72.

Ratcliff, J.W. (1983). Notions of validity in qualitative research methodology. *Knowledge: Creation, Diffusion, Utilization*, 5, 147-167.

Roberts, C.W. (2001). Content analysis. In Smelser, N.J. & Baltes, P.B (Eds.). *International encyclopaedia of the social and behavioural sciences*, pp. 2427-2433. New York: Elsevier.

Rochester, M.K. (1995). Library and information science research in Australia 1985-1994: A content analysis of research articles in The Australian Library Journal and Australian Academic & Research Libraries. *Australian Academic & Research Libraries*, 26(3), 163-170.

Rochester, M.K. & Vakkari, P. (2003). International library and information science research: A comparison of national trends. *IFLA Professional Reports*, 82, 1-40.

Rosenthal, R. (1979). The “file drawer problem” and tolerance for null results. *Psychological Bulletin*, 86(3), 638-641.

Rosenthal, R. (1991). *Meta-analytic procedures for social research*. Newbury Park, CA: Sage.

Ryan, D. & Lomas, E. (2007). The practitioners’ perspective on records management research. *Records Management Journal*, 17(3), 146-149.

Sandelowski, M. (1995). Qualitative analysis: What is it and how to begin? *Research in Nursing & Health*, 18, 371-375.

- Sapa, R. (2007). International contribution to library and information science in Poland: A bibliometric analysis. *Scientometrics*, 71(3), 473–493.
- Saracevic, T. (1999). Information science. *Journal of the American Society for Information Science*, 50(12), 1051-1063.
- Saxton, M.L. (2006). Meta-analysis in library and information science: Method, history, and recommendations for reporting results. *Library Trends*, 55(1), 158-170.
- Schlögl, C., & Stock, W.G. (2004). Impact and relevance of LIS journals: A scientometric analysis of international and German-language LIS journals - Citation analysis versus reader survey. *Journal of the American Society for Information Science & Technology*, 55(13), 1155–1168.
- Shepherd, E. (2011). An 'academic' dilemma: The tale of archives and records management. *Journal of Librarianship and Information Science*, 44(3), 17-184.
- Sin, S.C.J. (2006). Are Library and Information Science journals becoming more internationalized? A longitudinal study of authors' geographical affiliations in 20 LIS journals from 1981 to 2003. *Proceedings of the American Society for Information Science and Technology*, 42(1). Retrieved from <http://eprints.rclis.org/7004/>
- Singh, A.A. & Shelton, K. (2011). A content analysis of LGBTQ qualitative research in counselling: A ten-year review. *Journal of Counselling & Development*, 89, 217-226.
- Smith, C.P. (2000). Content analysis and narrative analysis. In Reis, H.T. & Judd, C.M. (Eds.). *Handbook of research methods in social and personality psychology*, pp.313-335. New York: Cambridge University Press.
- Smith, K. (2011). Why think? Just do: The dawn of a new era in Australia and implications for Australian LIS research. In F.M. Nadzar, M.S.H. Saad, & S. Abdulla (Eds.). *Asia-Pacific Conference on Library & Information Education and Practice: Issues, challenges, opportunities* (pp. 167-175). Putrajaya, Malaysia: Faculty of Information Management, Universiti Teknologi MARA.

Spink, A. & Heinström, J. (Eds.) (2012). *Library and information science trends and research: Europe*. Bingley, U.K: Emerald.

Staincliffe, P. (2012, 23-26 September). *The nonsense of copyright in libraries: Digital information and the right to copy*. Paper presented at the LIANZA 2012 Conference.

Stemler, S. (2001). An overview of content analysis. *Practical Assessment, Research & Evaluation*, 7(17). Retrieved from <http://PAREonline.net/getvn.asp?v=7&n=17>.

Stephens, D. O. (1998). Megatrends in records management. *ARMA Records Management Quarterly*, 32(1), 3-9.

Stewart, B. (2008, 28-29 August). *Interrelationship between the Public Records Act and the Privacy Act*. Paper presented at ARANZ 2008 32nd Annual Conference: Archives - Collaborating towards a networked future.

Strauss, A. & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory (2nd ed.)*. Thousand Oaks, CA: Sage.

Thompson, G. (2012). Legislative requirements to destroy records that supersede the provisions of the Public Records Act 2005. *Archifacts*, 12-18.

Trahan, E. (1993). Applying meta-analysis to library and information science research. *The Library Quarterly*, 63(1), 73-91.

Tsay, M.Y. (2008). Journal bibliometric analysis: A case study on the JASIST. *Malaysian Journal of Library & Information Science*, 13(2), 121–139.

Townley, C.T. (1991). Opportunities and challenges for LIS research in academic libraries: Elements of strategy. In McClure & P. Herson (Eds.). *Library and information science research: Perspectives and strategies for improvement* (pp. 267-278). Norwood, NJ: Ablex.

Tuomaala, O., Järvelin, K., & Vakkari, P. (2014). Evolution of library and information science, 1965-2005: Content analysis of journal articles. *Journal of the Association for Information Science and Technology*, 65(7), 1446 – 1462.

Turcios, M.E., Agarwal, N.K., & Watkins, L. (2014). How much of library and information science literature qualifies as research? *The Journal of Academic Librarianship*, 40, 473-479.

Turner, K.J. (2002). The use of applied library and information studies (LIS) research in New Zealand libraries. *Library Review*, 51(5), 230-240.

Uzun, A. (2002). Library and Information Science research in developing countries and Eastern European countries: A brief bibliometric perspective. *International Information & Library Review*, 34, 21-33.

Vakkari, P. (1994). Library and information science: Its content and scope. In I.P. Godden (Ed.). *Advances in librarianship*, Vol. 18 (pp. 1-55). Sand Diego, CA: Academic Press.

Van House, N.A. (1991). Assessing the quantity, quality, and impact of LIS research. In C.R. McClure & P. Herson (Eds.). *Library and information science research: Perspectives and strategies for improvement* (pp. 85-100). Norwood, NJ: Ablex.

Villani, S. (2001). Impact of media on children and adolescents: A 10-year review of the research. *Journal of the American Academy of Child & Adolescent Psychiatry*, 40(4), 392-401.

Watson-Boone, R. (2000). Academic librarians as practitioner-researchers. *The Journal of Academic Librarianship*, 26(2), 85-93.

Weber, R.P. (1990). *Basic content analysis (2nd edition)*. Sage: Newbury Park, CA.

Weber, R.P. (1995). Basic content analysis. In Lewis-Beck, M.S. (Ed.). *Research Practice. International Handbooks of Quantitative Application in the Social Sciences. Volume Six*. London: Sage.

Wildemuth, B.M. (2009). Using research results to improve practice in the information professions. In B.M. Wildemuth (Ed.), *Applications of social research methods to questions in information and library science* (p. 1-7). Westport, CT: Libraries Unlimited.

Willsemse, A. (2014). Librarians Using Social Media: The Role of Twitter in Forming and Cultivating Mentoring Relationships. *NZLIMJ*, 53(3). Retrieved from <http://www.lianza.org.nz/librarians-using-social-media-role-twitter-forming-and-cultivating-mentoring-relationships>.

Wilson, C.S., Kennan, M.A., Willard, P. & Boell, S.K. (2010). Fifty years of LIS education in Australia: Academization of LIS educators in higher education institutions. *Library and Information Science Research*, 32(4): 246-257.

Wilson, C.S., Boell, S.K., Kennan, M.A. & Willard, P. (2011). Publications of Australian LIS academics in database. *Australian Academic & Research Libraries*, 42(3), 211-230.

Wilson, C.S., Boell, S.K., Kennan, M.A. & Willard, P. (2012). Fifty years of LIS education in Australia: Research productivity and visibility of LIS educators in higher education institutions. *Journal of Education in Library and Information Science*, 53(1), 49-68.

Wilsted, T. (2002). Forming archival associations: A profession's golden age. *Archifacts*,

Woods, H.B. & Booth, A. (2013). What is the current state of practitioner research? The 2013 LIRG research scan. *Library & Information Research*, 37(116), 2-22.

Wormell, I. (2000). Libri's golden jubilee in a bibliometric mirror. *Libri*, 50(2), 75–94.

Zhao, D.Z. & Strotmann, A. (2008). Information science during the first decade of the web: An enriched author co-citation analysis. *Journal of the American Society for Information Science and Technology*, 59(6), 916-937.

Zins, C. (2007). Classification schemes of Information Science: Twenty-eight scholars map the field. *Journal of the American Society for Information Science and Technology*, 58(5), 645-672.

Appendix

1. Zins' Classification Scheme of Information Science

Category	Sub-categories
Data Organization and Retrieval	Abstracting; Classification schemes; Indexing; Knowledge organization; Metadata; Online searching techniques; Ontology Reference work; Taxonomies; Text mining; The semantic web; Thesauri; Vocabulary control.
Diffusion Studies	Communication theory; Information centres and libraries; Information dissemination; Message theory;
Foundations of Information Science	Archival Science; History of Information Science and Librarianship; History of Knowledge Formats (manuscripts, print and digital); History of libraries and librarians; Information Science epistemology; Library and Information Science as a profession.
Information/Learning Society	Electronic learning; Social and cultural aspects of the information society; Social communication; Sociology of knowledge; Information literacy;

	Information Science education; Lifelong learning.
Information Ethics and Law	Censorship; Copyright; Digital divide; Digital security; Free access to information; Information policies; Internet crime.
Information Industry Economics and Management	Collection management; Comparative intelligence; Databases; Digital libraries; Electronic commerce; Information centres and library management; Information industry market; Information management; Information manipulation; Knowledge management.
Information Technology	Artificial intelligence; Communication and computer networks; Digital security systems; Document delivery systems; Human-computer interaction; Information architecture; Information retrieval systems; Knowledge representation Multimedia; Networks technologies; Programming languages; Search tools; Structure of computerized systems; Systems analysis; Website construction;

Methodology	Bibliometrics; Bibliography; Domain analysis; Informatics; Quantitative and qualitative research; Webometrics.
Social Information Science	Community information; Health information centres; Information diffusion in multi-cultural societies; Information education; Information needs of different cultures; Power and ethics; Printed and electronic self-help sources; Social information banks; Social information sections in school and public libraries; The social information scientist.
User Studies	Human information behaviour; Information needs; Information-seeking behaviour; Reference interview; Scientist-interaction; Usability of web information; User-information.