

Evidence-Based Practice in U.S. Fire Library Management

By Lian Ruan

lruan@fsi.uiuc.edu

Illinois Fire Service Institute

University of Illinois at Urbana-Champaign

11 Gerty Drive, Champaign, IL 61820

Linda C. Smith

lcsmith@uiuc.edu

Graduate School of Library and Information Science

University of Illinois at Urbana-Champaign

501 E. Daniel St, Champaign, IL 61820

Short bios:

Lian Ruan is Director/Head Librarian, Director of China Programs, of the Illinois Fire Service Institute, University of Illinois at Urbana-Champaign. She is an adjunct faculty and doctoral student at the Graduate School of Library and Information Science, University of Illinois at Urbana-Champaign.

Linda C. Smith is Professor and Associate Dean of the Graduate School of Library and Information Science at the University of Illinois at Urbana-Champaign where she has been a member of the faculty since 1977. She holds a PhD from the School of Information Studies at Syracuse University.

Abstract:

Objective: The objective was to determine how special libraries serving fire professionals are used, valued, if they are efficiently organized to give maximum access to their resource collections, and the impact such libraries have on information use by fire professionals in their decision-making.

Methods: A survey was administered to fire professionals (including fire service personnel as first responders and researchers) in six fire libraries that represent significant contributors of information services in the United States. The study used the Chicago, Rochester, and SLA study instruments as the basis for questionnaires to measure the impact of library-supplied information on practical decision-making and applied research in the fire emergency services.

Results: Major findings from completed surveys include that 97% of the fire service personnel and researchers (n=343) said that the information received was relevant to their work. 97% reported that the information was of practical value and 81% said that the information was of research value. The special libraries were effective in supplying information in decision-making situations because 94% of respondents reported the information they received led to better-informed decisions, and in increasing their level of confidence in those decisions (89%). Areas

of impact included training, research, emergency response, changed procedures and policies, budget decisions, and personnel management.

Conclusions: The study demonstrates the vital and integrated roles fire service libraries can play in their organizations with information services having a direct impact on users' training, research, and emergency response activities. The overall study results will assist librarians in many different settings who can benefit from greater awareness of information needs related to public safety and homeland security and strategies for addressing them. Based on the results of the study, special librarians can develop services that target particular types of impacts, as well as improving the level of impact in various areas. The study also clearly indicates that fire libraries need to consider different approaches to evaluating their services, and the library profession needs to pay more attention to professional development in this area. Future research can include non-users, virtual users accessing services via a library's web site, and others involved in public safety, such as emergency medical responders. Other studies can examine and identify skills, attributes and subject knowledge for librarians and information professionals working in fire emergency services and homeland security.

Keywords: Evidence-Based Practice, Fire Library Management, Fire Service Personnel, Public Safety, Homeland Security

INTRODUCTION

There has been considerable discussion and coverage about the crucial roles local fire service personnel played in rescuing citizens and saving their lives during the terrorist attacks of September 11, 2001. Today's fire service personnel perform a wide range of duties in fire fighting, emergency medical care, hazardous materials, terrorism (e.g. biological, nuclear, incendiary, chemical, explosive terrorism) and other emergency responses for public safety and homeland security. Traditionally, fire departments respond to isolated, local incidents. For the occasional, large-scale response, mutual aid from a neighboring jurisdiction often provides the necessary additional resources. In the aftermath of September 11, 2001, it is no longer sufficient for fire departments to plan for these limited events. In response to coordinated attacks, local fire departments' emergency response system is required to have significant surge capacity of manpower, *information*, and equipment. Efficient management of information has become an increasingly important component of public safety and homeland security. Special librarians understand the essential role of credible information and possess the best competencies to serve dynamic information needs of fire service personnel.

Employing evidence-based research practice (SLA 2001), the objective of the research reported in this paper was to determine how special libraries serving fire professionals are used, valued, if they are efficiently organized to give maximum access to their resource collections, and the impact such libraries have on information use by fire professionals in their decision-making. In the Discussion of Results section, we will focus on the usage of libraries, quality of the information and the information service, cognitive value of the information perceived by fire professionals, value of the information for decision-making, and the impact libraries have on information use by fire professionals in their decision-making. The study attempts to expand our knowledge about the value and impact of information services provided by special libraries and the special librarians who manage them for fire service personnel and researchers in the fire service. By providing new evidence, the study hopes to build the knowledge base of special librarianship, particularly demonstrating the library's critical roles in public safety and homeland security.

LITERATURE REVIEW

Curtis and Abram (1983) proposed, "A library's output has to be measured...in terms of how, and to what extent, the actions of others are made more productive or their decisions successful. Following this line of reasoning, a library must measure value in user terms." Matarazzo et al. (1987) conducted value studies of library services for SLA to measure time saved and actual monetary savings for organizations, and provided anecdotal evidence of the value of library services. Basch (1990) suggested that further research, building on the efforts of the SLA President's Task Force, would be required to design and document approaches to measuring value. Urquhart and Hepworth (1996) discussed the Value project to assess the value to clinical decision-making of information supplied by National Health Service (NHS) library and information services.

Marshall (1993) suggested that special libraries exist based on demonstrated need rather than on social custom or expectations and special librarians need to get more data about how people in their organizations use the information provided by the library and find out more about what *impact* the information they provide has on what the people in their organizations do. There have been important reports in the literature that show the impact of specialized services, such as those provided by clinical librarians (Barbour & Young 1986; Cimpl 1985; Halsted et al. 1989), use of

MEDLINE by physicians for clinical problem solving (Lindberg et al. 1993), and the critical incident technique in library and information management research (Fisher & Oulton 1999). Hardy et al. (1985) discussed the issues involved in evaluating the impact of hospital library services in particular. As the measurement of quality and impact became primary concerns in organizations of the 1990s, personal, subjective approaches to evaluation were less likely to be considered adequate (Marshall 1993). However, measuring the impact of any information service is not easy. Urquhart (2003) provided guidelines on how to measure the impact of library service, with an emphasis on impact studies from the health sector. Weightman and Williamson (2005) offered a systematic review of studies investigating the value and impact of information provided through library services for patient care.

Three studies are most informative to this study design. King (1987) examined the contribution to patient care of a group of hospital libraries in Chicago, and Marshall (1992, 1993) examined a group of hospital libraries in Rochester, New York, and a group of bank libraries in Toronto. King's methodology and data collection instruments were later revised and expanded by Marshall (1992, 1993) in her studies. The Chicago and Rochester studies found that information provided by hospital libraries to physicians had a significant impact on clinical decision-making and on the physicians' assessments of the clinical value of the information, which included measures of quality, cognitive value, and contribution to patient care. The Rochester study further documented changes in patient care in specific areas such as diagnosis, choice of medical tests, choice of drugs, reduced length of hospital stay, and physician advice to the patient (Marshall 1992). The 1993 study findings revealed that the special libraries were particularly effective in supplying new knowledge in decision-making situations and in increasing the level of confidence of managers and executives in the decisions being made.

FEMA, USFA, and NFPA (2002) conducted a survey study, entitled "A Needs Assessment of the U.S. Fire Service, a Cooperative Study: Authorized by U.S. Public Law 106-398." The study identified needs and gaps in the fire services in the areas of personnel and their capabilities, fire prevention and code enforcement, facilities, apparatus and equipment, communications and communications equipment, ability to handle unusually challenging incidents, and new and emerging technology. But the study did not assess any information needs of the fire departments. Determining contribution from fire libraries in the United States to homeland security and public safety seems challenging. Most fire libraries have solo librarians

and do not routinely conduct evaluations of their services due to time and staff constraints. There are no established quality assurance procedures in fire libraries either. Assessment techniques used in other library settings are either inappropriate when applied to fire libraries or provide little insight into the effect of library services on fire professionals. This first multi-institution research study is designed to fill the gap.

METHODOLOGY

The survey method was selected for data collection. The study used the earlier Chicago (King 1987) and Rochester studies of the contribution of the hospital library to clinical care (Marshall 1992) and the SLA research study of the impact of the special library on corporate decision-making (Marshall 1993) as the basis for designing the questionnaires to measure the impact of library-supplied information on practical decision-making and applied research. All three studies focused on corporate libraries in the private sector. They were used as the basis of this study for several reasons. The earlier studies focused on the impact of hospital library services on patient care, which can be applied and expanded to practical decision-making and applied research in the fire service for public safety and homeland security. The research methodologies used in the earlier studies had many desirable characteristics of scientific validity and reliability using a measurement instrument. The challenge was to transfer the methodology used in the private sector to the public sector since the types of organizations involved and the types of impacts expected in health care and corporate environments are very different from the fire service.

Potential library participants reviewed several drafts of the questionnaire before the final version was agreed upon. Participating fire librarians and we jointly developed the questionnaires and conducted a pre-test at some participating libraries. The survey questionnaire was reviewed and approved by the Institutional Review Board at the University of Illinois at Urbana-Champaign. The final survey instrument consisted of thirty multiple-choice questions and four open-ended questions.

inFIRE (the international network for Fire Information and Reference Exchange, <http://www.infire.org>) is an international fire library consortium. Approximately

eighteen fire libraries in the United States are inFIRE members. Some of them are affiliated with government agencies and universities. These fire libraries represent the most accessible and professionally organized resources for U.S fire service. Six fire libraries from inFIRE, shown in Table 1, that represent significant contributors of information services to fire professionals (including fire service personnel as first responders and researchers) in the United States participated in the study.

Fire Library-Training	Fire Library-Research
1) New York State Department of State's Office of Fire Prevention and Control, Academy of Fire Science	1) National Fire Protection Association (NFPA)
2) Illinois Fire Service Institute, University of Illinois at Urbana-Champaign	2) Fire Protection Publications/Oklahoma State University
3) Fire/EMS/ Safety Center-Minnesota State Colleges and Universities	3) Oklahoma City National Memorial Institute for the Prevention of Terrorism

Table 1. Participating Fire Libraries

In order to understand those participating fire libraries, we developed and conducted a short library profile survey by asking librarians questions in the areas of collections, library use in one month (reference, database searches, circulation, photocopying, interlibrary loan), staff (number of professional librarians; number of support staff), budget (total operating budget for the current fiscal year), facilities (total number of square feet occupied by the library or information center). The characteristics of the libraries are shown in Tables 2 and 3. The staffing ranged from solo librarian to two professionals. The collection sizes vary, as did the level of library services. The challenges of understaffing and lack of funding were apparent.

Organization	Number of Titles					FTE staff		Facilities	Budget
	Monographs	Serials	Non-print ¹	E-resources	Archives	Librarians	Support staff	Square feet	
A	5,100	95	3,070	No Answer	No Answer	1	0	3,000	10,517
B	4,165	385	3,115	307	218	2	4	1,193	55,763
C	4,065	153	648	8,077 ²	202	1	1	1,500	20,000
D	10,923	230	334	No Answer	Historical archives	1	2	2,412	141,500
E	9,000	150	3,000	No Answer	Manuscripts & photographs	1	1	5,000	36,000
F	2,724	22	93	494	No Answer	1	4	285	No Answer

Note: 1. Non-print materials include videotapes, CD-ROMs, DVDs, slides, and transparencies. 2. Netlibrary ebooks.

Table 2. Characteristics of Participating Libraries in 2003

Organization	Reference	Circulation	Interloans Requested	Interloans Supplied	Library services
A	2,262	2,867	5	47	No Answer
B	1,530	1,468	81	421	Current awareness, OPAC training, listserv, reference, electronic document delivery
C	500	726	81	113	Online Fire Admin courses
D	1,500	Data not available	2	2	Document fulfillment, research
E	152	1,520	Data not available	Data not available	No Answer
F	45	120	12	12	No Answer

Table 3. Statistics of Participating Libraries

Table 4 indicates the attributes of library staff. Librarians cited main challenges they faced, including isolation from the rest of library and information science, recruitment of young librarians, building a library from scratch, and overwhelming amount of work.

Question Category	Response
Age	Most over 40 years old.
Gender	Most female.
Education	Hold multiple degrees.
Work experience	More than 5 years experience in various libraries, including special libraries and current positions; Most worked in a variety of library settings.
Multi-tasks	Play multi-roles in the current position.
Professional committees	Active members in more than one professional association, including SLA and local SLA chapters.
Reading	Most read professional magazines, including <i>Information Outlook</i> , an SLA official publication.

Table 4. Attributes of Participating Library Staff

The survey to library users was distributed over a seven-month period, February-August 2004. The fire professional population surveyed only included library users consisting of fire service personnel and researchers. We defined and counted any individual who used the library at least once as a user. 343 users of six libraries, representing both training and research institutions in fire service, responded to the survey. They evaluated the impact of the information received in response to a request for some information from their special library related to a recent decision-making situation. Respondents held a variety of positions, including firefighters (27%), training officers (19%), fire chiefs (13%), researchers (17%), administrative staff (13%),

and other (11%). Librarians in each of the six institutions acted as study facilitators and coordinators. The survey was distributed through U.S. mail or in person, accompanied by a cover letter explaining the purpose of the study. Respondents were assured that their anonymity and confidentiality would be maintained and their response was voluntary.

Gaining cooperation from multiple participating organizations in remote locations and the care required for adjustments in study procedures proved to be challenging. None of the participating organizations allowed us to obtain the name and address lists of patrons. To maintain the confidentiality and anonymity of the respondents, we made alternative arrangements for distributing the study package. The research assistant helped prepare study packages in print and online format with identification numbers, and created a customized website for each institution. Participating librarians were fully responsible for helping make a list of patrons from which they could collect survey data. They also had to make follow-up efforts to contact nonrespondents. The research assistants worked closely with them to determine a reason for the refusal and then continued to work with the librarian to recruit participants. In addition, we made fruitful site visits to all participating libraries and scheduled a telephone conference to ensure the smooth progress of the project.

Several limitations of the study should be noted. Our methodology emphasized outcomes related to meeting specific information needs. We investigated only library users in the public sector with their specific requests in particular situations. Non-library and virtual users were excluded. The study time frame of twelve months increased the number of potential respondents but also may introduce the possibility of incomplete and inaccurate recollections by respondents.

DISCUSSION OF RESULTS

Usage of the Libraries

The samples listed in Table 5 indicate that requests made by survey respondents to their libraries covered a variety of subjects to meet information needs in training, research, and other areas.

1) Research information for classes I was teaching .
2) Training information to present to a college class on the chemistry and physics of fire.
3) I had a list of books needed for a[n] upcoming Lt. Test .
4) A literature review for a project designed to mitigate behaviors associated with fatal smoking fires.
5) Information on the heat stress study.
6) Requested use of emergency response to terrorism instructor materials.
7) Materials on copyright laws and standard forms used.
8) What programs are out there on confined space training ?
9) Information regarding volunteer fire department retention and recruitment .
10) How does the fire/EMS distinction in career fire departments affect labor-management relations?
11) Material for search & rescue for interior fire operations .
12) Sources on the pros and cons of Quint apparatus .
13) Physical fitness for firefighters. Different examples and exercises specifically for the fire service.
14) Information linking CAD (Computer Aided Dispatch and Firehouse) software.
15) Materials on the subject of structural fire fighting ?
16) Historical data on fires in places of assembly .
17) Information on protecting firefighters working on the road at a traffic crash .
18) Looking for firefighter fatalities information .
19) Research material on the ethics in a fire department .
20) Information dealing with citizen fire academies .
21) I asked for information on obtaining grants for my department.
22) Reports on high-piled storage fire testing .
23) Which organizations are working with health and safety problems in rural areas in the U.S.?
24) Test reports and publications on suppression systems .
25) Requested training videos on pop-up roll bars and RIT [Rapid Intervention Team] .
26) Video case studies and material related to FAST/RIT [Fire Attack Suppression Training/Rapid Intervention Team] evolutions ?
27) Information on fire station construction .
28) Biomechanics of firefighting (the effect of wearing SCBA [Self-Contained Breathing Apparatus] on biomechanics). Statistics on firefighter injuries were required.
29) Information on policies and procedures related to performing fire station tours for civilians.
30) Information on the current threat of domestic right-wings extremist (Neo-Nazis, skinheads, Christian identity, etc.)
31) Reference materials on fire department budget development .

Table 5. Sample Requests Made by Respondents on Subject Areas

Respondents were asked in what situations they used the Library. 24% of respondents (n=304) said for research purpose, 18% for education, personal growth and interest, 18% for

training and teaching, 17% to ask for specific materials, 11% for library resources, 8% due to lack of local resources, and 2% seldom used the library.

Over 57% (n=340) of the respondents used the library at least once a month but not weekly. Only 9% of them reported that they were frequent library users and they used the library once a week or more often. 24% of them had used the library at least once but not monthly during the previous twelve months. 10% said they did not use the library at all (before they made the current request).

39% of respondents (n=343) based their responses on a current request, while 59% indicated that their request had been in the previous twelve months and another 2% did not specify. Respondents were asked what types of materials they sought and received from the library. About half of the requests (52%, n=343) made by survey respondents were for print format; non-print and e-resources are 26% and 19% respectively. Fire publishers may lag in electronic publishing, which may be the main reason for the low percentage of e-resources being sought (see Figure 1). 26% of respondents favored nonprint materials over other training formats. Although nonprint materials are reported as the most widely used teaching aids for fire emergency service training (Ruan 2001), for individual fire service personnel and researchers, they are extremely expensive to purchase and difficult to maintain, citing price and security reasons. For example, a six-videotape series, *Fire Investigation* (National Fire Protection Association, <http://www.nfpa.org>), cost non-members \$1,203 and members \$1,083 in 2001 (non-members \$ 1,395 and members \$1255.50 in 2006). A single videotape *Introduction to Hazardous Chemicals* (Emergency Film Groups, <http://www.efilmgroup.com>) cost \$395 in 2001 (\$425 in 2006). A CD-ROM with curriculum called *Essentials of Firefighting* (International Fire Service Training Association, <http://www.ifsta.org>) cost \$820 in 2001 (\$1,500 in 2006).

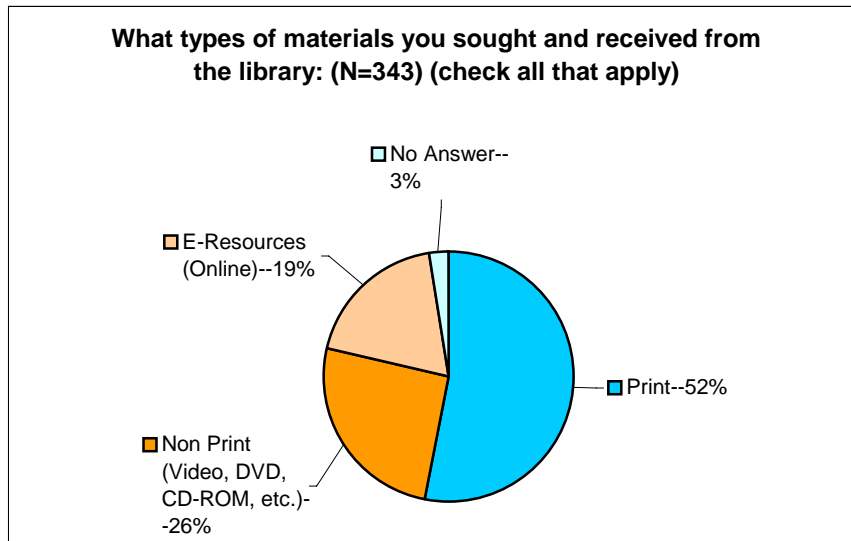
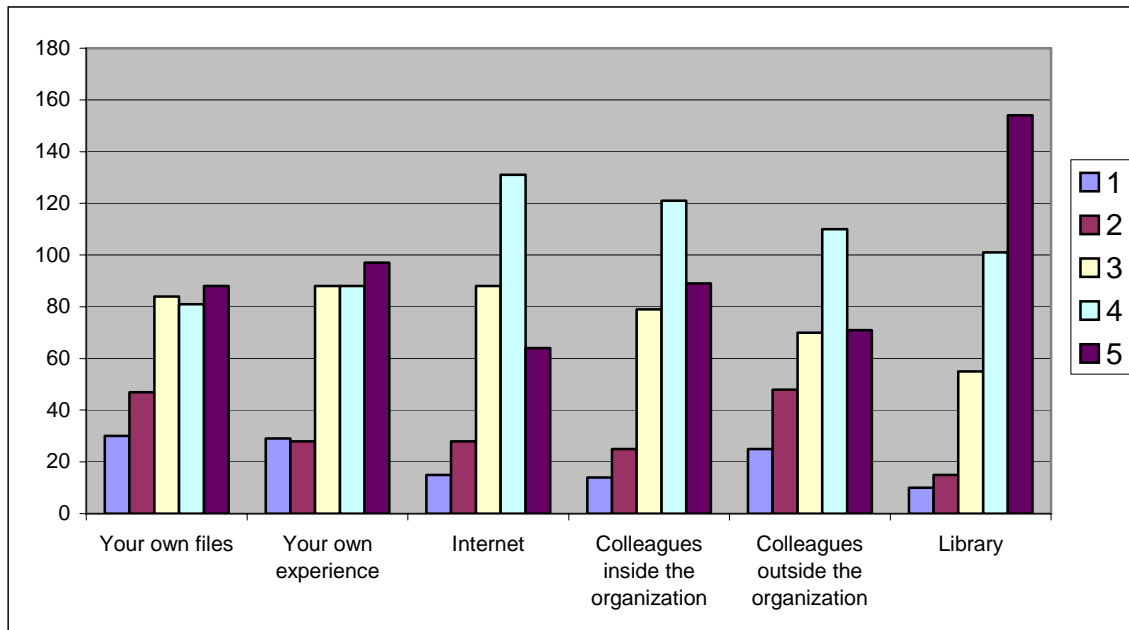


Figure 1. Types of Materials Sought and Received by Respondents

In a decision-making situation, it is most likely that fire professionals use information from a variety of sources as a basis for their actions and research. We were interested in determining respondents' perceptions of the relative value of the different sources they had used in the particular situation. We were especially interested in knowing how the information provided by the library rated in comparison to other sources, such as the person's own files and colleagues both inside and outside the organization. To examine the relative value of different sources and how important the library was when the respondents sought and used information in decision-making situations, the respondents were asked to rate the importance of the information received from each source used on a scale of 1 to 5 where 1=not very important at all; 2=of some importance; 3=of considerable importance; 4=of great importance; 5=of greatest importance. The types of sources include the individual's own files, experience, Internet, colleagues inside and outside the organization and the library.

An examination of the mean shows that the library was rated highest (4.12, S.D. 1.03), followed by the colleagues inside the organization (3.75, S.D. 1.07), Internet (3.62, S.D. 1.04), the respondents' own experience (3.59, S.D. 1.24), colleagues outside the organization (3.48, S.D.1.20), and their own files (3.45, S.D. 1.27).

When we examine the rankings in histograms (see Figure 2), it is apparent that the library received more 5 (5=of greatest importance) ratings than other sources, which indicates that more respondents view the library as the most important source.



Figure

2. Importance of Different Information Sources

Quality of the Information and the Information Service

Examining quality of information received, respondents were asked whether the information was relevant to the public safety and homeland security needs of fire professionals. 97% of the fire service personnel and researchers (n=343) who returned their questionnaires said that the information received was relevant to their work. This indicates that the libraries were highly relevant and essential to their work. The respondents were also asked if the information received was accurate and current. 96% of them (n=343) said yes, 2% said no, and 2% did not provide a response (see Figure 3). This shows that most of the respondents were pleased with the quality of information they received.

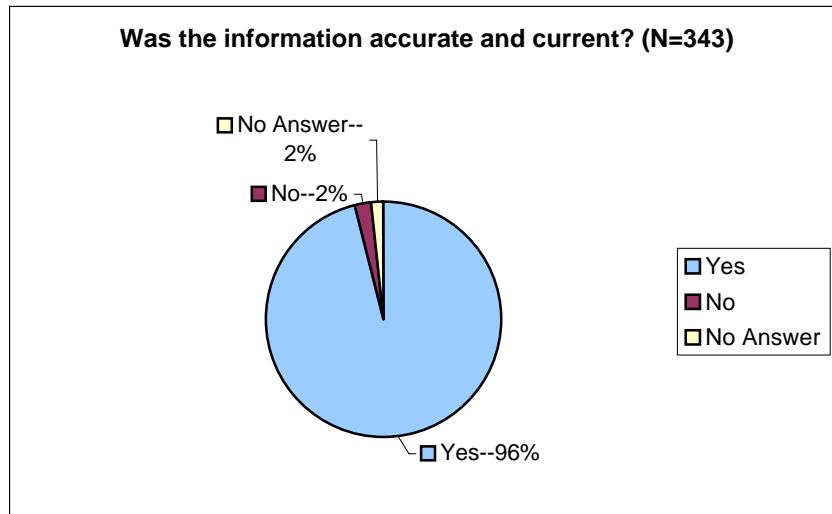


Figure 3. Accurate and Current Information

The Cognitive Value of the Information Perceived by Fire Professionals

Cognitive value of the information refers to its contribution to the knowledge of the fire professional. The growing amount of information available and the rapidly changing nature of information in today's world make it essential for decision-makers in homeland security and public safety to have a source they can use to refresh their memories and to make sure that their existing knowledge is still current. Respondents were asked if the information received refreshed their memory of pertinent details or facts. Refreshing the individual's memory of details or facts could have made this contribution or substantiated what he/she already knew or suspected. 78% of respondents (n=343) said yes, 19% said no and 3% provided no answer. We were more interested in whether the information provided the firefighter or researcher with new knowledge in the decision-making situation. Shown in Figure 4, 92% (n=343) of the respondents indicated that at least some of the information was new to them and a small proportion of them said no new knowledge was gained and 2% did not answer the question. In over 65% of the cases (n=343), the participants indicated that the information made them think of a dimension that they had not thought of before. The information they received increased their level of confidence as reported by 89% of respondents (n=343) in the decisions being made. 97% (n=343) reported that the information was of practical value and 81% (n=343) said that the information was of research value.

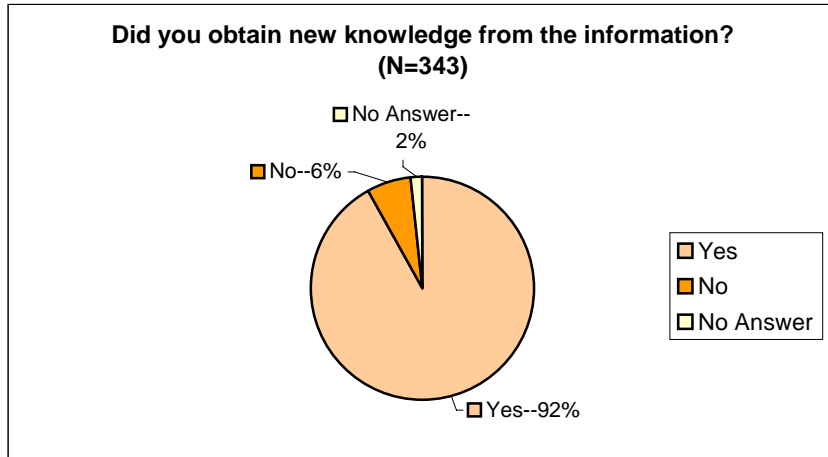


Figure 4. New Knowledge Gained

The Impact Libraries Have on Information Use by Fire Professionals in Decision-making

Respondents were asked if the information they received led them to better-informed decisions. A high percentage, 94% of respondents (n=343) said yes, 5% no and 1% with no answer (see Figure 5). Clearly, the information enabled most of them to make better decisions.

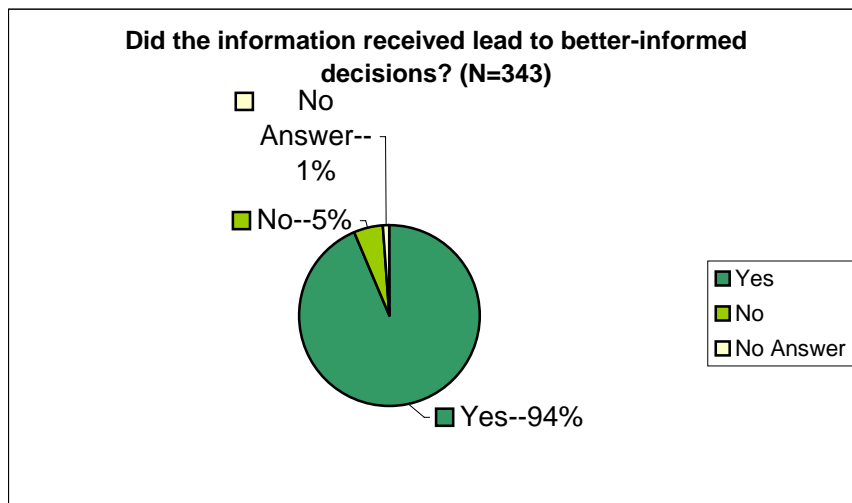


Figure 5. Information Received Led to Better-Informed Decisions

The respondents were asked if the information led them to better-informed practical decisions, contributing to their work. 80% of them (n=343) reported yes, 16% no and 4% no answer.

How did the information enable the respondents in decision-making? 89% of them reported that the information enabled them to take a course of action, 9% of them said no, and 2% did not respond (see Figure 6). The library's direct impact on the majority of them was obvious.

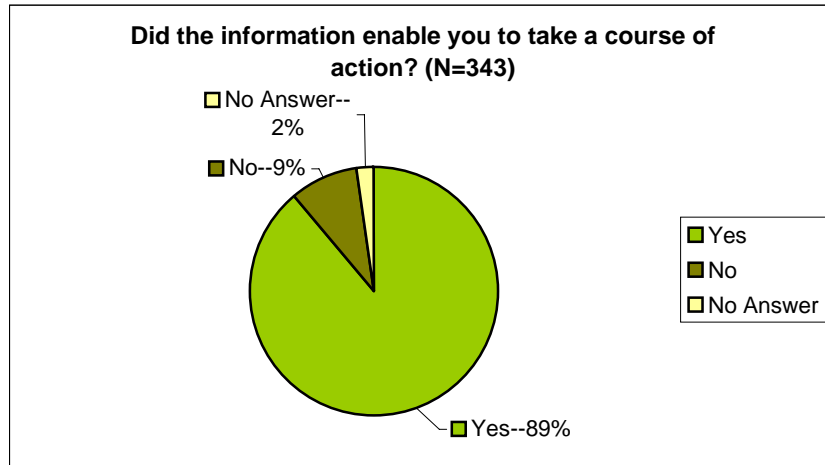


Figure 6. A Course of Action Taken

To reflect the specific types of decision-making situations encountered in fire emergency settings and gather action-oriented data to measure the extent of the enabling effect, fire professionals were asked the extent to which the information enabled them or their organizations to take action or move forward on a task. Figure 7 shows the number and percentage of respondents who indicated that the information contributed to their ability to take a particular type of action. The library's strongest contribution was in enabling fire service personnel and researchers to proceed to the next step in a project or task (39%, n=318). A second strong contribution, reported by the respondents (24%, n=318), was that the information allowed the firefighter or researcher to decide upon a course of action in research or training. It also appears that information provided by the library often contributed toward the ability of fire service personnel and researchers to decide upon a course of action in emergency response (13%, n=318).

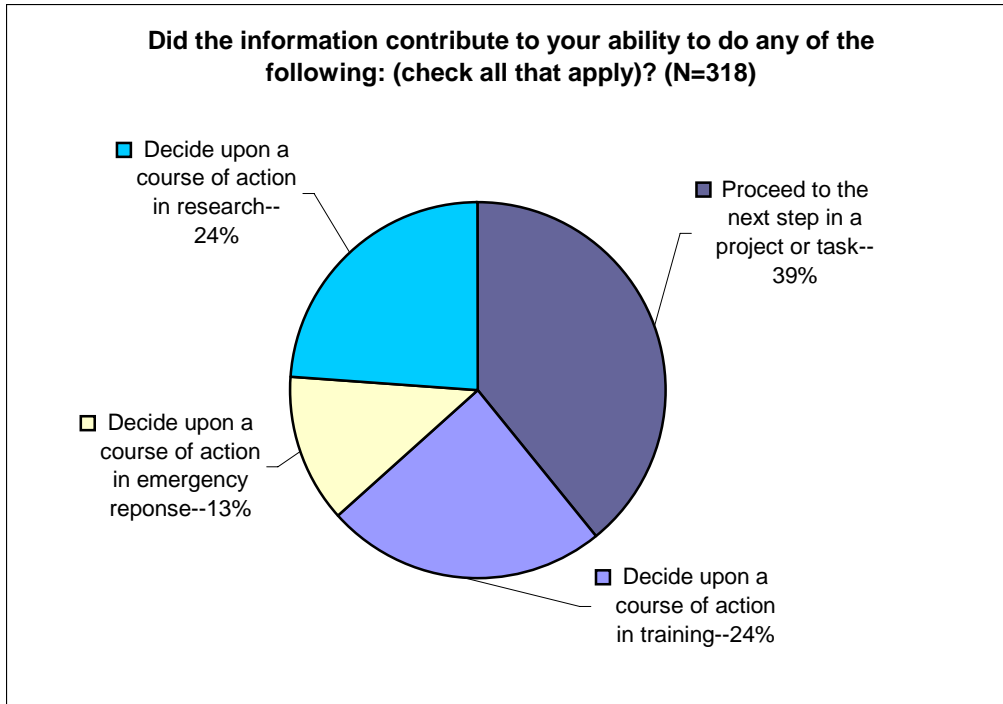


Figure 7. Specific Types of Decision-Making Situations

A supplementary question was used to examine in what areas the information contributed toward improvements. Improvements in personal interest were reported by 25% (n=328) of the respondents, in training by 21%, in education by 18%, in personal growth by 14%, in research by 11%, in administrative decision-making by 7%, and in career advancement by 4% (see Figure 8).

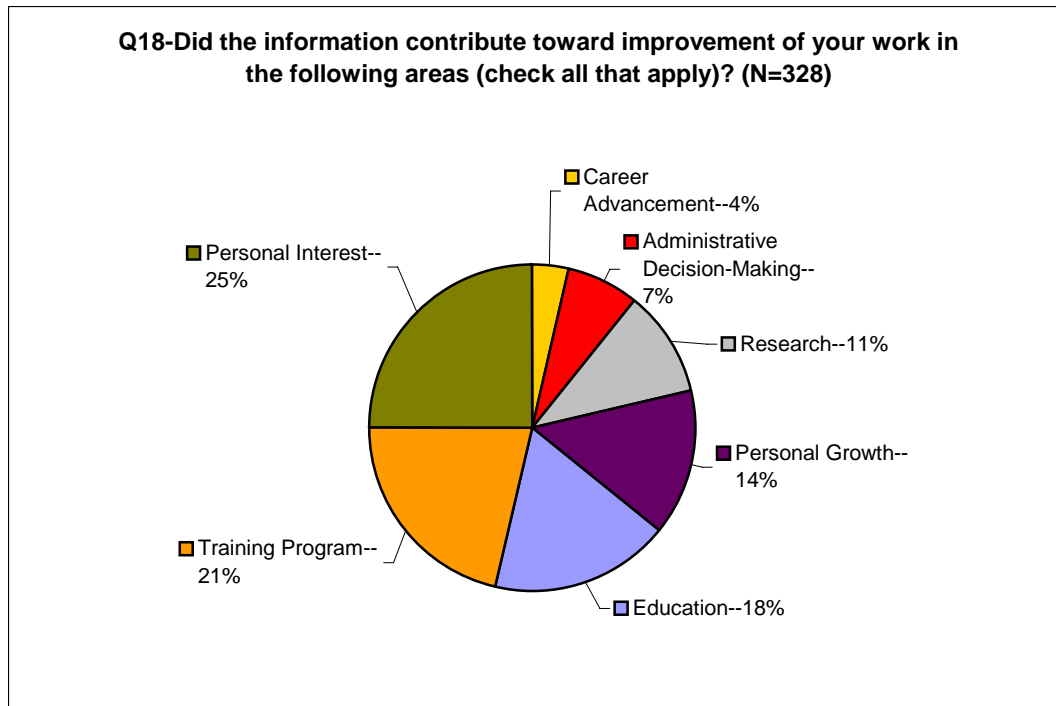


Figure 8. Work Improvement

To determine whether the information provided by the library changed some aspects of emergency response, additional questions were created as to whether the information contributed to the fire professional’s ability to avoid negative outcomes, e.g., injury and death, delay/wasted time. The data indicates that the information allowed respondents to avoid, to a considerable or great extent, the following negative outcomes. As shown in Figure 9, the greatest impact of the information was in avoiding what fire service personnel and researchers considered being the loss of their time or loss of the time of other staff in the organization (23%, n=278). There are comments throughout the questionnaires about the time saved by library services. The next ranking negative consequences avoided were delay/wasting time of the firefighter or researcher (18%), followed by death 17% and injury 15%. Related to the loss of time is the waste of organizational resources such as equipment or supplies as 8% of them reported. A smaller proportion of fire service personnel reported that the information affected their ability to avoid poor emergency response (10%), and poor training decision (9%). This finding is significant because it clearly demonstrates the libraries’ close involvement with the respondents’ daily work and decision-making process. It also demonstrates how crucially important library and information services are to the fire service personnel and researchers in the emergency response

field. The libraries are essential to their communities. Special librarians may consider targeting some of these areas for further improvement.

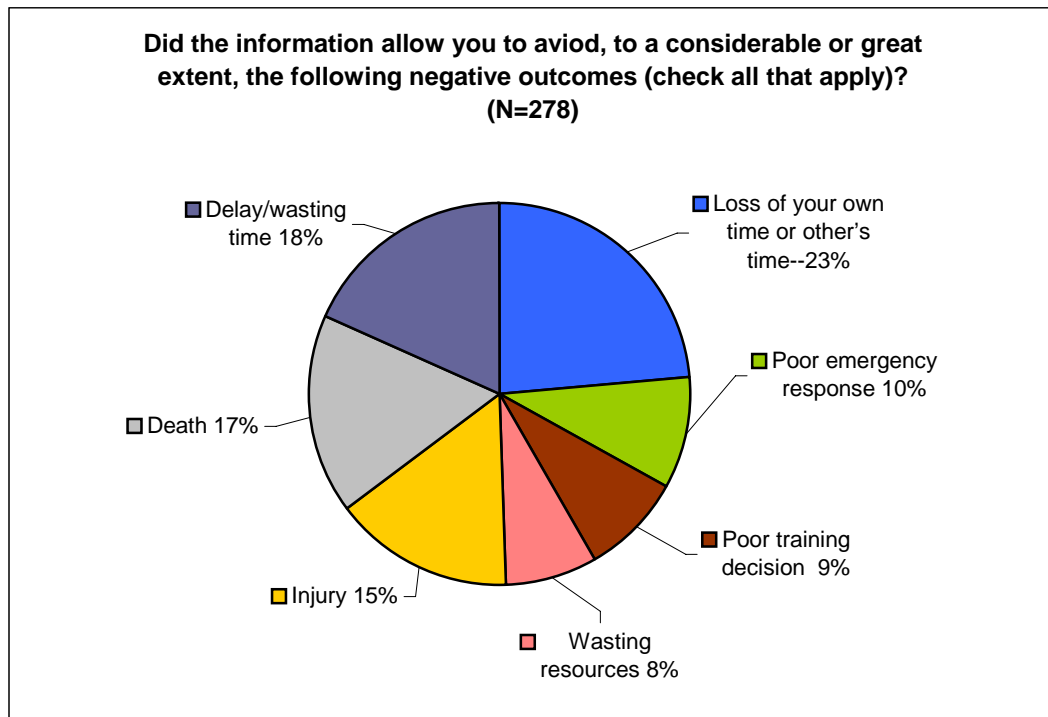


Figure 9. Negative Outcomes Avoided

As the survey results demonstrated, information has helped fire service personnel and researchers feel more confident about making a decision or recommendation, refresh their memories of details or facts, and introduce them to new data and ideas. Information has enabled the fire service personnel and researchers to get on with their jobs in the most efficient and effective way possible. It has empowered the fire service personnel and researchers to make quality improvements, such as improving a policy or procedure, even avoiding death and injury during emergency response and training. The study findings showed that when special libraries are used in decision-making situations, a significant impact could be made on the actions of users.

SIGNIFICANCE OF THE STUDY

In the current climate of homeland security and public safety, the rapid delivery of accurate and up-to-date information has been seen as more important than ever. There is no standard for fire library management in the United States. After the tragic events of September 11, 2001,

there has been growing interest in information management in the fire service discipline. Although there is fire safety information available on the Internet, it is poorly organized. Potentially, the findings of this research can serve as a basis for further development, collaboration, and enhancement of fire libraries in the United States. Among all fifty state fire academies, only a few of them have professional librarians managing the library. Serious steps will be required to assure that quality information services are available to the majority of fire professionals with more local, state and federal level collaboration and support. Based on the study findings, special librarians can develop new services that target particular types of impacts and user groups, as well as work toward improving the level of impact in various identified areas. The efforts of librarians, the refinement of information services to better meet the information needs of diverse constituencies, and more research upon which planning for fire information services is based will help secure the place of libraries in practical emergency response decision-making and improve the quality of public safety and homeland security.

The study provides a picture of the ability of fire libraries and their partnership with fire professionals to respond effectively to information requests in key public safety and homeland security situations. It recognizes different roles in fire emergency service – training, research as well as emergency response. Without training and preparedness, emergency response will not be effective. This study further demonstrates the vital and integrated roles libraries can play in their organizations and the direct impact on training, research and emergency response with information services to meet users' changing needs. The study findings can be used as a tangible example to help promote the profession and information service to those users in the fire service who are not aware of the resources available to them. The benefit and impact of information use by fire service personnel and researchers in the fire service need ongoing measurement and studies. There is an urgent need to enhance the information infrastructure and library professional work force to support the great demand of informational needs in public safety and homeland security. The findings may provide an important opportunity for library professionals and interested organizations to discuss the need and seek support to enhance information services in public safety and homeland security.

More questions will need to be formulated and investigated in this field. The answers to the open-ended questions merit further and in-depth content analysis and study. Some respondents

felt their library was underused and that users were unaware of library services, suggesting the continuing need for proactive marketing from special libraries. The importance of an easily accessible location was stressed as one factor affecting library use, even in an increasingly electronic work environment. 27% of respondents (n=207) noted that facilities, location and hours are the weakness for their libraries. Comparisons of data across all six participating libraries may increase understanding of user communities in a way to create specific services targeting particular needs.

CONCLUSIONS

The special libraries were effective in supplying information in decision-making situations. The study demonstrates the vital and integrated roles fire service libraries can play in their organizations with information services having a direct impact on users' training, research, and emergency response activities. The overall study results will assist librarians in many different settings who can benefit from greater awareness of information needs related to public safety and homeland security and strategies for addressing them. Based on the results of the study, special librarians can develop services that target particular types of impacts, as well as improving the level of impact in various areas. The study also clearly indicates that fire libraries need to consider different approaches to evaluating their services, and the library profession needs to pay more attention to professional development in this area. Future research can include non-users, virtual users accessing services via a library's web site, and others involved in public safety, such as emergency medical responders. Other studies can examine and identify skills, attributes and subject knowledge for librarians and information professionals working in fire emergency services and homeland security.

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Support “Evidence-Based Practice” in Special Libraries Serving Fire Service Personnel and Researchers in Public Safety and Homeland Security Areas” at www.sla.org.)

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