CHAPTER THREE
METHODOLOGY

3.1   Introduction

This chapter covers the methods of conducting this research. Line (1982) perceived the concept of 'methodology' as a body of knowledge that describes and analyses methods indicating their sources and limitations, and relating their potentials to research advances. According to Nachimias and Nachimias (1982), methodology is a system of explicit rules and procedures upon which research is based and against which claims for knowledge are evaluated. The system is neither closed nor infallible. Rather the rules and procedures are constantly improved. Scientists look for new methods and techniques of observation, inference, generalisation and analysis. As these are developed and found congruent with the underlying assumptions of the scientific approach, they are incorporated into the system of rules that make the scientific methodology.

The chapter is therefore divided into eight parts. Section one gives an introduction, section two focuses on the research design, section three deals with population of the study and sampling method, section four looks at data collection instruments, section five looks at the validity and reliability of instruments, section six deals with administration of the questionnaires, section seven looks at data analysis, and section eight looks at problems encountered during data collection.

3.2   Research design

The foregoing definition of methodology gives rise to a significant question relating to the precise nature of the concept of 'method' in the context of this study. While the definition indicates in general terms what the nature of the concept is, Adams and Schvaneveltdt (1982) simply define a research methodology as the application of scientific procedures towards acquiring answers to a wide range of research questions.

Different approaches use different methods for collecting data. In this study the researcher was interested in surveying the attitudes of librarians towards ICTs in Zambia. The aim was to suggest ways in which the attitude of librarians could be changed as libraries today are rapidly adopting ICTs.

The study employed a survey method based on its positive aspects. Nachimias and Nachimias (2003) define survey as one of the descriptive research methodologies that explores, evaluates and attempts to analyse, interpret and report on the facts and situations as well as opinions of people. Isaac and Michael (1982) define survey method as a means of gathering information that describe the nature of the extent of a specific set of data ranging from physical counts and frequencies to attitudes and opinions. The information in turn could be used to answer questions that have been posed or raised, to solve problems that have been posed or observed, to assess the needs and set goals to determine whether or not specific objectives have been met, to establish baselines against which future comparisons can be made, to analyse trends across time, and generally, to describe what exists, in what amount, and in what context.

A survey method was used because it involves the collection of data on a wide range of cases, each case being investigated only on a particular aspect under consideration (Powell, 1997). Its key strength is that, if properly done, it allows one to generalise from a smaller group to a larger group from which the subgroup has been selected (Powell, 1997). A survey method also saves time and money without sacrificing efficiency, accuracy of information and adequacy in the research process. Surveys are also relatively cheap and easy to conduct and allow open-ended questions to ensure flexibility on standardised responses so that pre-selected uniform responses can be chosen from the given options.

3.3   Population of study and sampling method

In this study, the target population were librarians drawn from tertiary institutions of learning and research institutes located in Lusaka, Central and on the Copperbelt. This was because the largest concentration of libraries that were automated were likely to be found. A purposive sampling technique was used to select a sample of 90 respondents. This sampling technique was chosen because in most libraries, there were very few targeted participants and therefore librarians present with qualifications ranging from certificate and above were picked. The sample consisted of librarians, assistant librarians, library assistants, documentalists, information officers, senior library assistants, information resource managers and library officers with qualifications ranging from certificate and above and those currently working in the target institutions.

3.4   Data collection instruments

Only self administered questionnaires were used to collect data in this study. The questionnaire used had a mixture of close-ended questions and some open ended questions. The instrument was suitable for this study because of the following reasons: It helped the researcher to collect data from a large number of respondents in the shortest possible time. The questionnaire also had a variety of answers and therefore reduced the chances of the respondent overlooking vital information.

The type of questionnaire mostly with close-ended questions also helped to reduce the possibility of obtaining ambiguous answers from the respondents. In addition, close-ended questions helped the researcher to obtain fairly straightforward, uncomplicated data. Anonymity was also assured with the questionnaire method because the respondents were able to complete the questionnaires in absence of the researcher. The questions were also presented in a fixed format and style thereby giving it little or no scope for biasness to be introduced. The questionnaire also enabled the respondents to complete them at there own time and pace. Moreover, the method chosen was relatively cheap and facilitated easy access to data and the instrument also reached and solicited data from more respondents than the face-to-face interviews.

On the other hand, a few open-ended questions allowed the respondents to formulate and record answers in their own words. They also allowed the respondents to include any vital information that could not have been captured or that was overlooked in the close-ended questions.

However, the researcher was also aware of the weaknesses associated with the questionnaire method chosen such as being reactive and lacking some probing power that interviews have. He was also aware of the weaknesses associated with personal interviews such as the lack of the ability to collect data from a large population within a short period of time. For instance, face-to-face interviews are good for complex, open-ended questions, which was however not the case in this study. The researcher therefore felt that the shortcomings inherent in interviews could be counter-balanced with the advantages that the questionnaire method has.

The questionnaires were pre-tested for error, omissions and ambiguity using 12 researcher's neighbourhood librarians at the University of Zambia.

3.5   Validity and reliability of instruments

To ensure internal validity, the researcher collected data using one source that is, through questionnaires but with a mixture of close and open-ended questions that called for content analysis. Leedy and Ormrod (2001) define internal validity of a research study as the extent to which its design and the data it yields allows the researcher to draw accurate conclusions from it.

3.6   Administration of the questionnaires

Taking cognizance of the various views voiced by various researchers on methodology in attitude studies in chapter two, the study ensured the following:

Self-administered questionnaires constituted the main data collection instrument. The questionnaires were delivered in person to the respective respondents in the targeted institutions as opposed to their residential addresses. The questionnaire collection period lasted for three (October, November, December) months. Respondents gave at most, seven days time frame in which to complete and return the questionnaires. It should also be noted that even if the researcher had to wait at each institution to collect the questionnaires, not all targeted staff were ready to fill them in there and then. This was so because some concerned library staff were not present. These made the researcher give such libraries some days in which the questionnaires were to be filled in and collected. Such arrangements were then done between the researcher and the head of the library. Follow ups were also done to increase the response rate. Prior to the administration of questionnaires, self introduction using student identification and in some cases staff identification cards was done.

3.7   Data analysis

Data collected from questionnaires were analysed using the Statistical Package for Social Sciences (SPSS) software and Microsoft office excel. Data collected were edited, coded and then entered into SPSS data editor. SPSS was used to summarise data in a way that would provide answers to research questions. It assisted in the generation of tables, frequencies and percentages. Analysis of data from open-ended responses involved the process of restructuring data into a form that allowed patterns to be identified. This was done using content analysis in excel.

This strategy (content analysis) involved grouping the respondents' answers into related themes in excel. Data analysed from questionnaires were later used as sections and sub-sections during report writing. The findings from the analysis helped to determine the attitudes of librarians and factors contributing to their attitudes in tertiary and research institutions in Zambia. Quantitative analysis provided facts and figures for easy verification and evidence, whereas qualitative analysis provided knowledge and understanding of attitudes of librarians towards use of ICTs.

3.8   Problems encountered during data collection

The following were the problems encountered during data collection. The researcher was unable to complete data collection on time because research funds were released late and when it was released, it was too little for the cost required. The researcher also had his son hospitalised and eventually lost him during the data collection period and hence had to attend to that problem. This affected the researcher in terms of recovering from the bereavement. Furthermore, the researcher did not have all the questionnaires he had distributed in the end because some respondents did not return them; some were incomplete while others had too many inconsistencies to be included. Time was another set back as the process of data collection started late thereby making the researcher work behind time. With adequate finances and time, the study could have been completed on time.

CHAPTER FOUR

PRESENTATION OF FINDINGS

4.1   Introduction

This chapter presents the findings of the study. The study was undertaken to survey the attitudes of librarians towards the use of Information and Communication Technologies (ICTs) in Zambia. The specific objectives of the study were to find out whether librarians had been trained in the use of ICTs, to find out the perceptions of librarians towards the use of ICTs in libraries, to find out factors that contribute to librarians' perceptions, and to find out how training in ICTs influences the use of ICTs.

This chapter is therefore divided into seven (7) sections. The first section introduces the chapter and also gives the response rate and background information about the respondents, the second section deals with findings on levels of automation in libraries, the third section concerns itself with training of librarians in the use of ICTs, and the fourth section looks at use of ICTs by librarians in libraries. The fifth section focuses on the perceptions of librarians towards the use of ICTs in libraries, the sixth section deals with perceptions of librarians on factors affecting them in the use of ICTs, the seventh section looks at the training of librarians in ICTs and its influence on their use, and section eight deals with other factors that affect librarians in the use of ICTs in libraries. Finally, section nine provides a conclusion of the research findings.

4.2   Response rate

A total of 100 self-administered questionnaires were distributed to librarians, assistant librarians, library assistants, documentalists, information officers, senior library assistants, library officers, and information resource managers working in various libraries in tertiary and research institutions scattered in Lusaka, Central and Copperbelt provinces. Out of that number, 97 questionnaires were returned, giving a response rate of 97%. However, out of the total number of the returned questionnaires, seven (7) were discarded because they were either incomplete or had too many inconsistencies. Hence, there were only 90 questionnaires useful for data analysis.

4.3   Background information about the respondents

This section covers the general information on the characteristics of the respondents in terms of their gender, age, highest education qualification obtained, designation, length of service and employment status.

Out of a total number of 90 respondents, 53% were male while 47% were female. This finding seems to suggest that librarianship is not a female dominated profession in Zambia unlike in the United Kingdom. In terms of age, table 1 shows that two respondents did not indicate their age, 11 were aged 20-25 years, 26 were aged 26-31 years, 18 were aged 32-37 years, 15 were aged 38-43 years, 11 were aged 44-49 years, 5 were aged 50-55 years, and 2 were aged 56-61 years. The data from table 1 therefore indicates that approximately 80% of the respondents were aged 43 years and below.

Table 1: Age of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-25	11	12.2	12.5	12.5
	26-31	26	28.9	29.5	42.0
	32-37	18	20.0	20.5	62.5
	38-43	15	16.7	17.0	79.5
	44-49	11	12.2	12.5	92.0
	50-55	5	5.6	5.7	97.7
	56-61	2	2.2	2.3	100.0
	Total	88	97.8	100.0	
Missing	No response	2	2.2		
Total		90	100.0		

Furthermore, in terms of education qualification, out of the total number of 90 respondents, three respondents did not indicate their highest education qualification obtained, 13% of the respondents obtained certificates in Library and Information Studies, 43% of the respondents obtained diplomas in Library and Information Studies, 35% of the respondents obtained degree certificates in Library and Information Studies, and 10% of the respondents obtained master degrees in Library and Information Studies. This finding seems to suggest that the majority of the respondents (43%) had diplomas followed by 35% of the respondents with first degree in Library and Information Studies.

Table 2: Designation of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Librarian	13	14.4	14.9	14.9
	Assistant librarian	25	27.8	28.7	43.7
	Library assistant	20	22.2	23.0	66.7
	Documentalist	6	6.7	6.9	73.6
	Information officer	5	5.6	5.7	79.3
	Senior library assistant	13	14.4	14.9	94.3
	Library officer	1	1.1	1.1	95.4
	Information resource manager	4	4.4	4.6	100.0
	Total	87	96.7	100.0	
Missing	No Response	3	3.3		
Total		90	100.0		

Table 2 shows the various positions respondents held in their libraries. Out of the total number of 90 respondents, three respondents did not indicate their positions, 13 were librarians, 25 were assistant librarians, 20 were library assistants, 6 were documentalists, 5 were information officers, 13 were senior library assistants, 1 was a library officer, and 4 were information resource managers. Therefore the majority of the respondents were Assistant librarians and Library assistants.

Table 3: Length of service of respondents at their institutions

		Frequency	Percent
Valid	Less than one year	15	16.7
	1 to 4 years	27	30.0
	5 to 9 years	17	18.9
	10 and more years	31	34.4
	Total	90	100.0

Furthermore, in terms of length of service of respondents at their institutions, table 3 shows that out of 90 respondents, 17% had worked for their institutions for less than a year, 30% had worked for 1 to 4 years, 19% had worked for 5 to 9 years, and 34% had worked for 10 years and above. This finding seems to suggest that the majority (34%) of the respondents had worked for 10 years and above followed by 30% of the respondents who had worked for 1 to 4 years.

As for employment status of respondents at their institutions, out of 90 respondents, 2 did not answer this question. Twenty-six percent of the respondents were on contract while 74% of the respondents were on permanent employment. This finding therefore seems to suggest that comparatively, there were more librarians on permanent employment than those employed on contract.

4.4 Levels of automation in libraries

This section presents findings of the study on levels of automation in libraries. When the respondents were asked to indicate the extent to which their library operations were automated, table 4 shows that 54% of the respondents indicated that their library operations were partially automated while 46% of the respondents revealed that their library operations were fully automated. These findings seem to suggest that most of the libraries were partially automated.

Table 4: Extent to which library operations were automated

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Partially	44	48.9	53.7	53.7
	Fully	38	42.2	46.3	100.0
	Total	82	91.1	100.0	
Missing	No response	8	8.9		
Total		90	100.0		

But when the respondents were further asked to specify the services that were automated in their libraries from the list provided, 61% of the respondents indicated cataloguing, 50% of the respondents indicated classification, 61% of the respondents indicated circulations, 43% of the respondents indicated reference, and 59% of the respondents indicated acquisitions. Other services which were reported to have been automated were the reserve collections.

Table 5: How long library operations have been automated

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than a year	8	8.9	10.8	10.8
	1 to 2 years	14	15.6	18.9	29.7
	3 to 4 years	10	11.1	13.5	43.2
	5 to 6 years	7	7.8	9.5	52.7
	7 and more years	35	38.9	47.3	100.0
	Total	74	82.2	100.0	
Missing	No response	16	17.8		
Total		90	100.0		

Respondents were asked to indicate how long their library operations had been automated. Table 5 shows that sixteen respondents did not indicate how long their library operations had been automated. However, 11% of the respondents indicated that their library operations had been automated for less than a year, 19% of the respondents indicated that their library operations had been automated for 1 to 2 years, 14% of the respondents indicated that their library operations had been automated for 3 to 4 years, 10% of the respondents indicated that their library operations had been automated for 5 to 6 years, and 47% of the respondents indicated that their library operations had been automated for 7 years and above. These findings seem to suggest that most of the libraries are still in their early stages of automation.

Table 6: How automation of library operations was done in libraries

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	User Involvement	49	54.4	69.0	69.0
	No Consultation	14	15.6	19.7	88.7
	Imposed	8	8.9	11.3	100.0
	Total	71	78.9	100.0	
Missing	No response	19	21.1		
Total		90	100.0		

The respondents were then asked whether they were involved in the automation process of their library operations. The results in table 6 show that 69% of the respondents indicated that they were involved in the automation process, 20% of the respondents indicated that they were not consulted while 11% of the respondents indicated that the process of automation was imposed on them.

However, 19 respondents did not answer this question. These findings seem to suggest that 69% of the respondents were involved in the automation of their library operations.

In order to know the type of ICTs that were available in libraries, the respondents were further asked to indicate the type of ICTs available in their libraries from the list provided. In response, 99% of the respondents reported that they had computers, 79% of the respondents reported that they had photocopying machines, 92% of the respondents reported that they had printers, and 51% of the respondents reported that they had scanners. Other equipment indicated included LCD projectors, land phones, fax machines, DVDs, television sets, microfiche readers and light pens in their libraries.

4.5 Training of librarians in the use of ICTs

This section presents the findings of this study in relation to ICT literacy levels of respondents, whether the respondents had been trained in the use of ICTs, and the kind of training the respondents had in ICTs.

Table 7: ICT literacy level of respondents in libraries

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Expert	3	3.3	3.4	3.4
	Above average	38	42.2	43.2	46.6
	Average	44	48.9	50.0	96.6
	Beginner	3	3.3	3.4	100.0
	Total	88	97.8	100.0	
Missing	No response	2	2.2		
Total		90	100.0		

It was also necessary to know the literacy levels of respondents in ICTs. Respondents were therefore asked to rate their ICT literacy levels. Eighty-eight respondents answered this question. Table 7 shows that 3% of the respondents reported that they were experts, 43% of the respondents reported that their ICT literacy levels were above average, 50% of the respondents reported that their ICT literacy levels were average, and 3% of the respondents reported that they were beginners. Two respondents did not indicate their ICT literacy levels. These findings seem to suggest that the literacy levels of the respondents were relatively high (50% average and 43% above average).

When the respondents were also asked whether they had training in the use of ICTs, out of a total of 89 respondents, 92% of the respondents indicated that they had training in the use of ICTs, whereas 8% of the respondents indicated that they had no training in the use of ICTs. These findings seem to suggest that the majority (92%) of the respondents had training in the use of ICTs.

Furthermore, in order to know the kind of training that the respondents had in ICTs, the respondents were asked to indicate whether the kind of training attended was formal or informal. A total of 81 respondents answered this question. The majority (88%) of the respondents indicated that they had formal training in ICTs whereas 12% of the respondents indicated that they had informal training in ICTs. These findings seem to suggest that the majority of respondents had formal training in ICTs.

The respondents who indicated that they had formal training in ICTs were further requested to indicate the qualifications they obtained after their formal training. Fifty percent of the respondents reported that they obtained certificates of attendance, 24% of the respondents reported that they obtained certificates at college, 8% of the respondents reported that they obtained diplomas at college, 6% of the respondents reported that they obtained degree certificates at university. These findings therefore seem to suggest that whereas most librarians attended short ICT training courses to obtain certificates of attendance, the component of ICT was integrated in their Library and Information Studies programme during their studies at university or college.

When the respondents were then asked to indicate whether the training they had recieved in ICTs was adequate, 54% of the respondents indicated that it was not adequate while 46% of the respondents indicated that the training they recieved in ICTs was adequate.

4.6 Use of ICTs by librarians in libraries

In relation to training of librarians in the use of ICTs, this section further presents findings of the study on whether the respondents used the computers in their libraries, what the respondents used the ICTs for and the reasons why some respondents never used the ICTs in their libraries. Ninety-six (96%) of the respondents indicated that they used computers in their libraries while 4% of the respondents did not.

The study sought to find out what the ICTs were used for in libraries from a list that was provided. In response, 91% of the respondents reported that they used ICTs for e-mails, 88% of the respondents reported that they used them for information searches, 66% of the respondents reported that they used them for cataloguing, 64% of the respondents reported that they used them for circulations control of library materials, 52% of the respondents reported that they used them for classification of library materials, and 55% of the respondents reported that they used them for reference services.

Furthermore, the respondents were asked to specify what else they used the ICTs for in their libraries. Eighty-six percent of the respondents reported that the ICTs were also used for downloading e-documents from websites, for management of e-resources, for storage of digital images, for word processing, for digital video conferencing, for photocopying library materials, and for the processing of students and staff identity cards. However, 4% of the respondents reported that they used ICTs in Internet cafes, in other people's offices and in computer laboratories. These findings seem to indicate that while the majority of the respondents used ICTs in libraries, other respondents went else where to use the ICTs.

It was therefore, felt necessary to ask 4% of the respondents to explain why they never used the ICTs in their libraries. In response the respondents reported that it was because ICT facilities were not enough for everyone. In addition, computers were not connected to Internet and therefore the respondents preferred places that provided access to Internet. In addition, the respondents reported that computers in the libraries usually broke down.

4.7   Perceptions of librarians towards the use of ICTs in libraries

This section presents findings of the study with regard to the perception of respondents on the use of ICTs in their libraries, reasons for the negative perception of some respondents towards the use of ICTs, and the perception of respondents on the effect that ICTs have on the staffing levels in their libraries, perception of respondents on the authenticity of data received through print sources compared to e-resources, perception of respondents on efficient ways that ICTs offer in carrying out work in their libraries, and perception of respondents on the feasibility of ICTs for their libraries.

The section further presents findings of this study on the perceptions of respondents on the impact that their attitude has on the use of ICTs in their libraries.

Using a two point rating scale, namely: 1=Negative, 2= Positive, the respondents were asked to indicate their perception about the use of ICTs in their libraries. Table 8 shows that 94% of the respondents indicated that their perception about the use of ICTs was positive while 6% of the respondents indicated that their perception was negative. These findings therefore seem to suggest that the perception of respondents about use of ICTs in libraries that were automated was generally positive.

However, the perception of some respondents about use of ICTs in their libraries was negative. Hence, there was need to find out the reasons that the 5 respondents had for their negative perception towards use of ICTs in their libraries. Five respondents answered this question. Three respondents reported that the reason for their negative perception towards the use of ICTs was due to lack of training in ICTs, lack of access to the ICTs in the libraries, and lack of interest in ICTs. Two other respondents reported that it was due to lack of time to use computers, and was also due to technophobia (fear of technology).

Furthermore, to establish the perception of the respondents on four attitude items, a four point rating scale was used. This comprised 1=Agree, 2=Strongly Agree, 3=Disagree, 4=Strongly Disagree. The respondents were asked to indicate whether they felt that ICTs affected the staffing levels in their libraries.

Fifty percent of the respondents disagreed that ICTs affected the staffing levels in their libraries while 8% of the respondents strongly disagreed. Twenty-eight percent of the respondents however, agreed that ICTs affected the staffing levels in libraries while 14% of the respondents strongly agreed with the statement. Generally, the findings seem to suggest that the majority of the respondents (58%) felt that ICTs never affected the staffing levels in libraries.

When the respondents were further asked to indicate whether data received through print sources were authentic compared to e-resources, 40% of the respondents disagreed that data received through print sources were authentic compared to e-resources while 8% of the respondents strongly disagreed with the statement. On the other hand, 44% of the respondents agreed that data received through print sources were authentic compared to e-resources while 9% of the respondents strongly agreed with that view. These findings seem to suggest that the majority of the respondents (53%) were of the opinion that data received through print sources were authentic compared to e-resources.

Furthermore, when the respondents were asked to indicate whether ICTs offered more efficient ways to carry out work in their libraries, 5% of the respondents disagreed that ICTs offered more efficient ways to carry out work in their libraries while 2% of the respondents strongly disagreed with that statement. However, 48% of the respondents strongly agreed whereas 45% agreed that ICTs offered more efficient ways of carrying out library work. The findings therefore, seem to suggest that the majority (93%) of the respondents were generally of the opinion that ICTs offered more efficient ways to carry out work in their libraries.

When the respondents were further asked to indicate whether ICTs were not feasible for their libraries, 50% of the respondents disagreed with that statement while 40% of the respondents strongly disagreed that ICTs were not feasible for their libraries. On the other hand, 5% of the respondents agreed whereas 5% of the strongly agreed that ICTs were not feasible for their libraries. The findings seem to indicate that the majority (90%) of the respondents felt that ICTs were feasible for their libraries.

On the other hand, when the respondents were asked to state the impact that their attitude would have on the use of ICTs in their libraries in the 'other specify' option, some respondents were of the opinion that if their attitude was positive towards the use of ICTs, this would improve efficient and effectiveness of service, help them keep abreast with library trends in their profession, encourage librarians not familiar with ICTs, and would lead to greater usage of ICTs. Other respondents however, felt that if their attitude towards the use of ICTs was negative, this would increase fear of ICTs among librarians and it would also contribute to less usage of ICTs and furthermore, discourage librarians from acquiring skills in ICTs.

4.8   Perceptions of respondents on factors that affect the use of ICTs in libraries

This section presents findings of the study on factors that affect use of ICTs in libraries and the perception of respondents on the factors provided on the list considered to affect them in the use of ICTs in their libraries. The factors considered were gender of respondents, age of respondents, employment status of respondents, and attitude of respondents.

4.8.1   Effect of gender of respondents on use of ICTs in libraries

The respondents were asked whether gender affected them in the use of ICTs in their libraries. Ninety-three percent of the respondents felt that gender never affected them in the use of ICTs while 7% of the respondents felt that gender affected them in the use of ICTs.

This finding seems to indicate that the majority (93%) of the respondents were of the opinion that gender of librarians never affected them in the use of ICTs.

The reasons given by 7% of the respondents that gender affected them in the use of ICTs in the 'other specify' option were that in their workplaces, everyone was free and had equal opportunity to use ICTs irrespective of their gender, the use of ICTs did not discriminate based on gender, gender was not a barrier to the use of ICTs, there was no correlation between gender and the use of ICTs, ICTs cut across gender issues, and all people were trainable irrespective of their gender.

4.9 Effect of age of respondents on use of ICTs in libraries

Five age-related factors were considered. When the respondents were asked whether their age affected them in the use of ICTs in their libraries, 58% of the respondents felt that their age never affected them in the use ICTs in their libraries while 42% of the respondents felt that their age affected them in the use of ICTs. With regard to this finding, the majority of the respondents were of the view that their age never affected them in the use of ICTs in the libraries.

This factor (age) was further investigated to establish whether the respondents felt that older librarians were uncomfortable to learn new skills than younger librarians. Out of a total of 35 respondents who answered this question, the results revealed that although the majority of the respondents felt that their age never affected them in the use of ICTs, 91% of the respondents felt that older librarians were uncomfortable to learn new skills than younger librarians while 9% of the respondents did not feel so. These findings indicate that comparatively, older librarians were uncomfortable to learn new skills than younger librarians.

Similarly, when the respondents were further asked whether they were of the opinion that older librarians also found computers more difficult to use than younger librarians, out of 35 respondents who answered this question, 97% of the respondents were of the opinion that older librarians also found computers more difficult to use than younger librarians while 3% of the respondents did not feel so. From these percentages, the findings indicate that the majority (97%) of the respondents were of the opinion that older librarians also found computers more difficult to use than younger librarians.

Furthermore, 94% of the respondents were of the opinion that younger librarians rated their computer proficiency more highly than older librarians, while 6% of the respondents did not feel so. These findings indicate that the respondents were of the opinion that younger librarians rated their computer proficiency more highly than older librarians. When the respondents were also asked whether they felt that ICTs were so recent that most people over the age of 28 have not had the benefit of computer training during their schooling, out of 32 respondents who answered this question, 78% of the respondents felt so while 22% of the respondents did not feel so.

Similarly, these findings indicate that the respondents felt that ICTs were so recent that most librarians over the age of 28 have not had the benefit of computer training during their schooling.

Furthermore, respondents were asked whether they felt that older librarians feared that years of routine could be replaced instantly with the introduction of ICTs, 79% of the respondents felt so while 21% of the respondents did not feel so. A total of 28 respondents answered this question. These results indicate that the majority (79%) of the respondents felt that with regard to age, older librarians feared that years of routine could be replaced instantly with the introduction of ICTs.

4.10   Perceptions of respondents on the effect of employment status on the use of ICTs

Respondents were asked to find out whether they felt that position held by librarians affected them in the use of ICTs in their libraries. Fifty-three percent of the respondents felt so while 47% of the respondents did not feel so. Hence, from these findings, the respondents felt that position held by librarians affected them in the use of ICTs in the libraries.

This factor (employment status) was investigated further, to find out whether the respondents felt that employment status affected them in the use of ICTs because non-professional librarians were not given equal opportunity to use ICTs. This question was answered by a total of 42 respondents. The findings revealed that 67% of the respondents were of the opinion that non-professional librarians were not given equal opportunity to use ICTs while 33% of the respondents were not of that opinion. Therefore, the findings indicate that employment status affected the respondents in the use of ICTs because non-professional librarians were not given equal opportunity to use ICTs.

When the respondents were further asked whether they were of the opinion that tasks of librarians could be very different and consequently the use of ICTs might be more important to one group than the other, 42 respondents answered this question.

Ninety-five percent of the respondents were of that opinion while 5% of the respondents were not of that opinion. In this regard, the results indicate that the majority (95%) of the respondents were of the opinion that tasks of librarians could be very different and consequently the use of ICTs might be more important to one group than the other.

Furthermore, when the respondents were asked whether they felt that recently qualified librarians might have undergone computer training during their study or attended professional development courses to improve their skills, out of a total of 41 respondents, 93% of the respondents felt so while 7% of the respondents disagreed with the statement. Fifty-four percent of the respondents did not answer this question. The findings indicate that the majority (93%) of the respondents felt that comparatively, recently qualified librarians might have undergone computer training during their study or attended professional development courses to improve their skills.

This factor (employment status) was further investigated to establish whether the respondents felt that contract or permanent employment status of librarians in the library affected them in the use of ICTs in their libraries, out of a total of 80 respondents who answered this question, 88% of the respondents did not feel so while 12% of the respondents felt so. This finding indicates that the respondents believed that contract or permanent employment status of librarians never affected them in the use of ICTs in the libraries.

The respondents were further asked if they were of the opinion that librarians on contract and on permanent employment were not given equal opportunity to use ICTs. A total of 10 respondents answered this question. Sixty percent of the respondents were of the opinion that librarians on contract and on permanent employment were not given equal opportunity to use ICTs while 40% of the respondents disagreed with that opinion. These findings indicate that the respondents were of the opinion that librarians employed on contract and on permanent were not given equal opportunity to use ICTs in the libraries.

When the respondents were also asked whether they were of the opinion that librarians on contract worked few hours hence used ICTs less frequently, 80% of the respondents were of that opinion while 20% of the respondents disagreed with that opinion.

Ten respondents answered this question. This finding seems to indicate that the respondents were of the opinion that librarians on contract worked few hours hence used ICTs less frequently.

When the respondents were further asked whether they were of the view that belated or insufficient training might explain why librarians on contract found ICTs harder to use, out of a total of 7 respondents, 71% of the respondents disagreed with that view while 29% of the respondents were of that view. Although so many respondents did not answer this question, the findings indicate that the respondents were of the view that belated or insufficient training might explain why librarians on contract found ICTs harder to use.

4.11   Attitude of librarians and its effect on use of ICTs in libraries

Five attitude-related factors were considered. When the respondents were asked whether they believed that their attitude affected them in the use of ICTs in their libraries, 63% of the respondents believed the statement while 37% of the respondents disagreed with the statement. Therefore, the results indicate that the respondents believed that their attitude affected them in the use of ICTs in the libraries.

This factor (attitude) was further investigated to establish whether the respondents were of the opinion that with regard to attitude, they feared to be replaced with others with the relevant skills. Out of a total of 48 respondents, 79% of the respondents were of the opinion that they feared to be replaced with others with the relevant skills. However, 21% of the respondents disagreed with that opinion. These findings indicate that the respondents were of the opinion that they could be replaced with others with the relevant skills.

When the respondents were also asked whether they were afraid of the effect brought about by ICTs on their health, such as eye strain, headaches, etc, out of a total of 44 respondents, 68% of the respondents were of the opinion that ICTs had effects on their health such as eye strain, headaches, etc while 32% of the respondents disagreed with that opinion. These findings indicate that the respondents were of the opinion that ICTs had effects on their health such as eye strain, headaches, etc.

The respondents were further asked to indicate whether they believed that ICTs brought uncertainty and discomfort in them with regard to job security. Forty-six respondents answered this question. Sixty-seven percent of the respondents felt so whereas 33% of the respondents did not feel so. From the percentages of respondents who answered this question, the findings indicate that the respondents believed that ICTs brought uncertainty and discomfort in them in terms of their security on the job.

When further asked whether the respondents believed that ICTs created additional tasks to be performed in a day such as logging PCs on and off, a total of 40 respondents answered this question. Fifty-three percent of the respondents did not feel so while 47% of the respondents felt so. The findings indicate that the respondents did not believe that ICTs created additional tasks to be performed by them in a day such as logging PCs on and off.

Furthermore, out of a total of 48 respondents, 75% of the respondents felt that there was more demand from the users as a result of ICTs such as having to learn how to use the ICTs while working, while 25% of the respondents did not feel so. These findings indicate that the respondents felt that there was more demand from the users as a result of ICTs; such as having to learn how to use the ICTs while working.

4.12   Training of librarians in ICTs and its influence on their use in the libraries

This question was answered on the basis of eight statements provided on the list on influence of training of librarians in the use of ICTs. When the respondents were asked whether they felt that training in ICTs influenced them to use ICTs in their libraries, 83% of the respondents felt so while 17% of the respondents did not feel so. From these findings, the respondents felt that training in ICTs influenced them to use ICTs in their libraries.

In order to consolidate the analysis on the influence that training of librarians might have on the use of ICTs in the libraries, the respondents were further asked whether they felt that training in ICTs influenced their perceptions to use ICTs in their libraries. Out of a total of 90 respondents, 77% of the respondents felt so whereas 23% of the respondents did not answer this question.

Although 23% of the respondents did not answer this question, these findings indicate that the respondents felt that training in ICTs influenced their perception to use ICTs in their libraries.

When the respondents were further asked whether they were of the opinion that training in ICTs enhanced their computer skills in their libraries, out of a total of 73 respondents, 96% of the respondents were of the opinion that training in ICTs enhanced their computer skills in their libraries while 4% of the respondents were not of that opinion. These findings indicate that the respondents were of the opinion that training in ICTs enhanced their computer skills in their libraries.

Similarly, when the respondents were also asked whether they believed that their training in ICTs reduced their attitudinal barriers to the acceptance of ICTs, 97% of the respondents believed that training in ICTs reduced their attitudinal barriers to the acceptance of ICTs whereas 23% of the respondents did not feel so. These findings indicate that the respondents believed that their training in ICTs reduced the attitudinal barriers to their acceptance of ICTs.

Furthermore, the respondents were asked whether they felt that their training in ICTs promoted the usage of ICTs in their libraries. A total of 71 respondents answered this question. While 97% of the respondents felt that their training in ICTs promoted the usage of ICTs in their libraries, 3% of the respondents did not feel so. Therefore, the findings indicate that the majority of the respondents felt that their training in ICTs promoted the usage of ICTs in their libraries.

The respondents were also asked whether they were of the opinion that their training in ICTs was essential in introducing positive change in the workplace. Out of a total of 90 respondents, 78% of the respondents were of the opinion that their training in ICTs was essential in introducing positive change in the workplace while 22% of the respondents did not answer this question. These findings seem to indicate that the respondents were of the opinion that their training in ICTs was essential in introducing positive change in their workplaces.

Furthermore, the respondents were asked whether they felt that their training in ICTs was a key strategy in overcoming any resistance to change. Out of a total of 90 respondents, 80% of the respondents felt that their training in ICTs was a key strategy in overcoming any resistance to change whereas 20% of the respondents did not answer this question.

However, the findings indicate that the majority of the respondents felt that their training in ICTs was a key strategy in overcoming any resistance to change.

When the respondents were also asked whether they felt that their training in ICTs was a means of building their morale in their libraries, out of a total of 71 respondents who answered this question, 97% of the respondents felt so while 3% of the respondents did not feel so. These findings indicate that the majority of the respondents therefore, felt that their training in ICTs was a means of building their morale in their libraries.

Asked whether the respondents were of the view that their training in ICTs influenced their involvement and satisfaction with ICTs, out of a total of 90 respondents, 80% of the respondents were of the view that their training in ICTs influenced their involvement and satisfaction with ICTs whereas 20% of the respondents did not answer this question. The findings indicate that the respondents were of the view that their training in ICTs influenced their involvement and satisfaction with ICTs.

4.13   Other factors that affect librarians in the use of ICTs in libraries

The respondents were also asked to state other factors which they felt affected them in the use of ICTs in their libraries. The following were other factors which the respondents felt affected them in the use of ICTs in their libraries: poor Internet connectivity, interruption of power supply, obsolete ICT facilities, consistent breakdown of ICTs facilities, lack of funds to purchase ICT equipment, inadequate ICT facilities in libraries, technophobia among some librarians, resistance to change by most library staff, lack of training in ICTs and restricted use of ICTs to selected librarians.

4.14   Conclusion of research findings

This chapter presented the findings of this study. A complete picture regarding the attitude of librarians towards the use of ICTs in the libraries is also given in this chapter. In addition, the perceptions of librarians and factors such as gender of respondents, age of respondents, employment status of respondents, and attitudes of respondents thought to affect the attitude of librarians in their bid to adopt and use ICTs in libraries are also identified.

The perception of librarians about use of ICTs in libraries was reported to be generally positive, as they consented to most of the attitude items provided. However, the respondents felt that they were afraid of being replaced with librarians with relevant skills. In addition, they also had fears of the effect brought about by ICTs on their health.

They also believed that ICTs brought uncertainty and discomfort in them with regard to their job security. They also felt that ICTs brought more demand on them such as having to learn how to use the ICTs whilst working.

The study further revealed that the position held by librarians in the libraries was reported to negatively affect their use of ICTs because non-professional librarians were not given equal opportunity to use ICTs. In addition, tasks of librarians were also very different and consequently the use of ICTs was reported to be more important to one group than the other. Also, recently qualified librarians were reported to have undergone computer training during their study or attended professional development courses to improve their skills; therefore impacting on use of ICTs.

Furthermore, in terms of contract and permanent status of respondents, the respondents were however of the opinion that although their contract or permanent employment status never affected them in the use of ICTs in the libraries, the respondents felt that comparatively, librarians on contract worked fewer hours than those on permanent employment hence used ICTs less frequently. Belated or insufficient training on the part of librarians on contract might also explain why librarians found ICTs harder to use. Hence, the respondents felt that these factors negatively affected librarians on contract in the use of ICTs.

The study also established that although the age of respondents was reported not to have any negative effect on their use of ICTs in their libraries, they strongly felt that with regard to age, other age-related factors negatively affected them in the use of ICTs in the libraries. These factors were that older librarians were uncomfortable to learn new skills, older librarians found computers more difficult to use than younger librarians, younger librarians rated their computer proficiency more highly than older librarians, ICTs were so recent that most librarians over the age of 28 have not had the benefit of computer training in the course of their studies and that older librarians feared that years of doing routine work could be replaced instantly with the introduction of ICTs.

However, the findings further revealed that the respondents reported that their gender never affected them in the use of ICTs in libraries on account of the fact that the use of ICTs was not affected by gender.

The respondents were of the opinion that if their attitudes were positive towards the use of ICTs as reported by the majority, the impact that their positive attitude would have on the use of ICTs in libraries are improved efficient and effectiveness of service, librarians would keep abreast with library trends in their profession. In addition, librarians not familiar with ICTs would be encouraged to use them, and this would lead to greater usage of ICTs in libraries. Other respondents however, felt that if their attitude towards the use of ICTs was negative, this would increase fear of ICTs among librarians and it would also contribute to less usage of ICTs and consequently, discourage librarians from acquiring skills in ICTs.

On the other hand, the findings of this study established that the majority of libraries along the line of rail were reported to be partially automated. The majority of users were also reported to be involved in the automation of libraries. The findings also indicated that the majority of librarians had formal training in ICTs received at university or college. Furthermore, the findings revealed that training of librarians in ICTs was vital as it influenced them to use ICTs in their libraries. However, the respondents reported that among other problems, most libraries faced financial problems to buy ICT equipment to automate or complete the automation of their library operations.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1   Introduction

This chapter discusses the findings of the study on the survey of the attitude of librarians towards use of ICTs in Zambia. Discussed are levels of automation in libraries, training of librarians in the use of ICTs, the use of ICTs in libraries, the perceptions of librarians about the use of ICTs in libraries, factors that affect the use of ICTs in libraries, and influence of training on use of ICTs.

5.2   Levels of automation in libraries

According to the findings of the study in sub-section 4.4 of chapter 4, the results showed that 54% of the respondents reported that their libraries were partially automated while 46% of the respondents reported that their libraries were fully automated. Library operations that were reported to be automated were, cataloguing, circulations, acquisitions, classification, reference and the reserve collections. These findings seem to suggest that most libraries visited along the line of rail were partially automated.

Respondents were further asked to indicate how old their automated library operations were. The findings showed that out of 74 respondents, the majority (47%) of the respondents reported that their automated library operations were seven (7) years and above. However, 19% of the respondents reported that their automated library operations were one to two years old, 14% of the respondents reported that their automated library operations were three to four years old, and 10% of the respondents reported that their automated library operations were five to six years old.

These findings indicate that libraries in Zambia are at different stages with regard to adoption of ICTs. In addition, library automation in Zambia is still in its infancy stage. A good example is Mulungushi University where it was revealed that automation was still in its infancy stage. Furthermore, libraries in Zambia could also be experiencing some impediments which include high cost/acute shortage of funds, interruption of power supply, computer breakdowns, poor Internet connectivity, and lack of maintenance of ICT equipment.

In addition, the sustainability of existing ICT equipment and inadequate ICT facilities, and lack of trained manpower with the required skills for library automation have a negative impact on automated library operations. This therefore affects the successful automation and use of ICTs as libraries still rely on manual systems. This also means that electronic and manual systems would continue to complement each other for a long time to come. These findings agree with the findings of Chisenga (1995) that problems of automation of libraries are due to financial problems, lack of maintenance and sustainability of ICT equipment, and irregular electric power supply.

With regard to automation, further investigations were conducted to find out from the respondents how automation was done in their libraries. The findings of this study showed that the majority (69%) of the respondents indicated that they were involved in the automation process. However, 20% of the respondents reported that they were not consulted in the automation of their libraries, while 11% of the respondents reported that automation was imposed on their libraries. The research has shown that where the users are involved in the automation process of their libraries, they will willingly accept and fully own the new system. In addition the research has also shown that as libraries, it is important to consult the users of the new system because they are the ones that will determine whether automation is going to be successful or not (Chifwepa, 2006).

The findings of this study on the importance of user involvement in library automation agree with Liquire's (1993) findings that involving the users in the automation process empowers them because having something imposed on them obliterates any sense of power and control they might have had over their work. This also means that, a key variable in determining the acceptance of new technology seems to be whether the users have control over the decision to automate or not. Therefore, the successful implementation of any library automation is dependant on staff involvement.

These findings also agree with the findings of Bill and Wanyama (2001), and Bichteler (1987). Bill and Wanyama's (2001) findings were that if the new library system is imposed on librarians, they might have to handle and use it to serve the users at the same time as they themselves are learning how to operate the system.

Bichteler's (1987) findings were that, in the workplace, which includes the library environment, lack of consultation might result in resistance to the acceptance of technology. This might take the form of unwillingness or inability to be trained and to learn the new system.

5.3   Training of respondents in the use of ICTs

The findings of this study in sub-section 4.5 of chapter 4 on whether the respondents ever had training in the use of ICTs revealed that 92% of the respondents reported that they had been trained in the use of ICTs at university or college. However, 8% of the respondents reported that they did not have training in ICTs. The findings also showed that 88% of the respondents reported that they had received some formal training in the use of ICTs while 12% of the respondents reported that they had received informal training.

Furthermore, 50% of the respondents reported that they had obtained certificates of attendance and these were the majority. Twenty-four percent of the respondents reported that they had obtained examined certificates in Library and Information Studies at college, 8% of the respondents reported that they had obtained diplomas in Library and Information Studies at college, and 6% of the respondents reported that they had obtained degree certificates in Library and Information Studies at university.

In terms of adequacy of training received in ICTs, the majority 54% of the respondents reported that the training they received in ICTs was inadequate while 46% of the respondents reported that the training they received in ICTs was adequate. Furthermore, 50% of the respondents reported that their ICT literacy levels were average, 43% of the respondents reported that their ICT literacy levels were above average, 3% of the respondents reported that they were experts while 3% of the respondents reported that they were beginners.

These findings seem to suggest that the majority of the respondents had some formal training in the use of ICTs. Furthermore, the results of this study show that librarians in Zambia attend formal training in ICTs at university or college. These findings also indicate that whereas most librarians attend short ICT courses to obtain certificates of attendance, the component of ICTs was integrated in their Library and Information Studies programme at university or college. However, the training received by librarians is not adequate although the ICT literacy levels in the findings were high.

The implications of these findings are that probably, the training at university or college did not sufficiently prepare them in terms of skills for the actual work in the field. Furthermore, the training they had received might be inadequate or irrelevant to their current jobs. This may also impact negatively on library automation as librarians might not be adequately trained to carry out the tasks ahead. This also means that one-off training at university or college is not enough as ICTs keep on improving. Williamson (1993) states that good training must be ongoing, making it an essential constituent of the culture of an organisation, rather than a one-off event. Therefore, it is also important that due to rapid advancements in ICTs librarians have to be continuously trained and retrained.

5.3.1 Use of ICTs by librarians in libraries

According to the findings of this study in sub-section 4.6 of chapter 4, the majority (96%) of the respondents reported that they used ICT facilities in their libraries while 4% of the respondents disagreed. The results further revealed that 91% of the respondents reported that they used ICTs for e-mails, 88% of the respondents reported that they used ICTs for information searches, 66% of the respondents reported that they used ICTs for cataloguing of library materials, 64% of the respondents reported that they used ICTs for circulations control of library materials, 52% of the respondents reported that they used ICTs for classification of library materials, and 55% of the respondents reported that they used ICTs for reference services.

In the context of library and information services, the research has shown that the use of ICTs in libraries can enable librarians to easily catalogue their library materials, and also classify their library materials. In addition, librarians would also find it very easy to control the circulation of library materials. The ICTs would also enable users to access many services from the libraries without any human intervention. This means that the role of the librarian is changing from an intermediary to a facilitator and enabler. Furthermore, as a result of use of ICTs in libraries, there is likely to be changes in formats, contents and methods of production and delivery of information products, and a new business model for use of information products. The picture we also get from these findings is that most librarians are now using ICTs in their libraries to perform among other tasks, core functions such as processing of library materials in an efficient and effective manner.

It must also be born in mind that ICTs have collapsed barriers and promoted fast communication and interactions across boundaries (Owoyemi, 2001).

The findings of this study agree with those of Shariful and Nazmul (2006), and Chisenga's (1995) findings in the literature reviewed. For example, Shariful and Nazmul's (2006) findings were that ICTs are significant to libraries because carrying out library operations manually was getting difficult due to the ever growing size of recorded information and space available in libraries was limited. In addition, although the collection will grow continuously, no library can think of getting additional space every year, and due to knowledge explosion, the libraries are faced with multifaceted and multi-dimensional information to such an extent that not only its storage has created challenges, but the organisation of this information has also become unwieldy making fast and easy access and retrieval of information problematic.

Meanwhile, some of the respondents reported that they also used ICTs for other services such as downloading e-documents from websites, for the management of e-resources, for the storage of digital images, for word processing, for digital video conferencing, for photocopying library materials and for processing staff and student identity cards. However, other respondents reported that they used the ICTs in Internet cafes, in other people's offices and in computer laboratories due to the fact that the facilities were not enough for everyone in the libraries. In addition, not every library was connected to the Internet and sometimes Internet connectivity was slow or not there at all. Maintenance of ICT equipment was also a big problem.

It can therefore be argued that, ICTs are far too expensive for a vast majority of individuals and institutions such as libraries in Zambia. So also are the connection fees and online charges. It may be possible to get sponsors or donated equipment to set up a modern library but even then, supplies and maintenance can constitute a problem. Computer accessories, printers and other valuable parts are not always available if and when they breakdown. Experts need to travel long distances to towns/cities to purchase them. These problems increase overall expenditure on ICTs for libraries.

5.4   Perceptions of respondents towards use of ICTs in libraries

According to the findings of this study in sub-section 4.7 of chapter 4, on the perception of respondents about the use of ICTs in their libraries, 94% of the respondents indicated that their perception about use of ICTs in their libraries was positive while 6% of the respondents indicated that their perception about use of ICTs in their libraries was negative.

These findings seem to indicate that the perception of librarians towards use of ICTs in libraries visited along the line of rail was generally positive. The research has therefore shown that librarians in Zambia have a favourable attitude towards the adoption and use of ICTs in libraries. The findings also seem to suggest that the adoption of ICTs in libraries would be easy. They also point to the fact that librarians in Zambia are willing to be trained.

Despite these results, the perception of some respondents towards use of ICTs in libraries was negative due to lack of training in ICTs by librarians, lack of access to ICTs, lack of interest in ICTs, lack of time to use the computers, and fear of using ICTs.

The implication of the negative attitude portrayed by the 5 librarians is that the librarians are likely to be very unwilling to be trained in ICTs and therefore may lack the relevant skills in ICTs. The ICTs are likely not to be useful to them and hence the librarians may not be interested in their use. In addition, librarians are likely to have difficulties to accept change from traditional ways of doings things to modern ways of doing things. The librarians may also not be able to know what technologies are available and their suitability. They are also likely not able to integrate the technologies and provide for their availability. For instance, Rosen and Weil (2000) state that although there are people who are genuinely excited by new technology and enjoy using it, there are a substantial number who are resistant to technology.

The findings of this study on the perception of librarians agree with the findings of Fine (1986), Evald (1996), Idowu (1997), Rowley (1998), Chifwepa (2006), Sorensen (1990), Engstrom (2001), Rosen and Weil (2000). Their ideas are presented below.

Fine (1986) and Evald's (1996) findings were that positive attitudes are assumed to be fundamental in the acceptance, implementation and success of new technologies because for ICT systems to be successful, it is suggested that staff need positive attitudes to ICTs.

Idowu's (1997) findings on the use of computerised information systems in selected university libraries in Nigeria were that in general terms, the librarians were highly positive in their attitudes towards the use of ICTs because they found the ICTs necessary in their workplaces.

Furthermore, Rowley's (1998) findings were that the attitudes of staff to ICTs affect the service received by the users and have far-reaching consequences. In his research, Rowley observed that most of the librarians he studied were positive towards technology and found the use of ICTs necessary in their work. He then concludes that if librarians had positive attitudes towards the use of ICTs, library and information services to the users would be improved.

Chifwepa's (2006) research findings on the application of ICTs in distance education at the University of Zambia were that people with positive attitudes towards computers and related technologies were more likely to become more involved with ICTs and even adopt them for their personal, academic and professional use. He therefore, concludes that it is vital to consider the attitudes and perceptions of librarians as possible movers of the adoption of ICTs. Chifwepa (2006) concludes that libraries should not overlook the perception of librarians when new technologies are being introduced because users are key in the success of the adoption and use of technologies.

With particular emphasis to negative perception exhibited by some respondents towards use of ICTs, the findings of this study also agree with Sorensen's (1990) findings that apart from registering positive attitude towards ICT, there are some librarians who prefer to show a negative attitude towards it. He observes that some librarians resist change (a shift from the traditional library system) due to their self-image which has to do with the librarian's personality. Moreover, by frowning at the negative attitude registered by some librarians towards ICTs, individuals who have negative attitudes are unlikely to make effective and efficient use of information systems.

Similarly, Engstrom (2001) states that there is no doubt that ICTs bring about rapid changes in the libraries that use them. However, despite the benefits associated with ICT, some librarians receive them with mixed feelings or indifference. The changes in libraries also include changes in the roles of librarians and these changes are received with mixed feelings. He does not see the computer as the answer to all the problems libraries have and that it makes work less interesting even though the same technology makes library activities/services less complex.

Despite the seeming pros and cons of ICT, Angstrom's conclusion is that, for every computer user to have job satisfaction, adequate skills and accuracy is required. Furthermore, the results of this study on human fear of technology (technophobia) were consistent with those of Rosen and Weil (2000) that people are frightened of new technology from dishwashers to computers, giving rise to expressions such as technophobia, cyber phobia, computer anxiety, and techno stress.

5.4.1 Perceptions of respondents on the effect of ICTs on staffing levels

Furthermore, the study sought the opinion of the respondents on 5 attitude items. When the respondents were asked to indicate whether they thought ICTs affected staffing levels in their libraries with regard to reducing the staffing levels, the findings of this study showed that 58% of the respondents disagreed that ICTs had an effect on reducing the staffing levels in libraries while 42% of the respondents agreed with the statement. These findings seem to suggest that ICTs never affected the staffing levels of librarians in libraries.

The findings also seem to indicate that the availability of ICTs in libraries may not necessarily affect the staffing levels by way of reduction in numbers but merely improve the efficiency and effectiveness of service delivery (Rabina and Walczyk, 2007). The emergency and use of ICTs in tertiary and research libraries automatically expands the role of librarians. As indicated by Mundy and Sultan (2001) with the emergence of ICTs, the role of the librarian has changed. They have become much more of communicators in the sense that information workers, extension workers and subject specialists who must reach out in order to guide their constituencies. The impact of these findings on the librarians is that there will be need for ICT knowledge, ICT skills, ICT tools, and need for continuous learning in the context of rapidly changing ICTs (Mundy and Sultan, 2001).

The findings of this study on the perception of librarians with regard to the effect of ICTs on reducing the levels of staffing were quite consistent with those of Sykes (1991), Nawe (1995), Fallow (1997), and Morris and Dyer (1998). Their findings revealed that ICTs might result in altered relationships such as having to work with different colleagues and supervisors, which might be unnerving for some.

This means that ICTs may cause some people to be replaced with those with relevant skills and in the process, old relationships are altered when joined by new colleagues. ICTs may also blur role boundaries. For example, library assistants may take on more technological duties previously the preserve of librarians.

5.4.2 Perception of respondents on authenticity of data received through print sources compared to e-resources

The respondents were also asked whether they thought data received through print sources were authentic as compared to e-resources. The findings in chapter 4 showed that 53% of the respondents felt that data received through print sources were authentic as compared to e-resources while 48% of the respondents did not feel so. These findings suggest that the respondents were of the opinion that data received through print sources were authentic as compared to e-resources. The results also seem to indicate that librarians prefer hard copies to electronic resources because they are not yet convinced that electronic resources are original and reliable as they have just been introduced. Also, the results seem to suggest that the respondents feel that print resources are user friendly than e-books especially when reading. However, the researcher is of the opinion that it is easier to circulate an e-book than print material. This view is supported by Mundy and Sultan (2001) that with ICTs, it is becoming less and less important to have printed copies on the library shelves.

5.4.3 Perceptions of respondents on ICTs and their efficient ways of carrying out work in libraries

The respondents were again asked to indicate whether their ICTs offered more efficient ways to carry out work in libraries. The findings showed that (93%) of the respondents felt so while 7% of the respondents did not feel so. These findings seem to suggest that the respondents were of the opinion that ICTs offered more efficient ways to carry out work in libraries. This could be attributed to the fact that with ICTs, there is speed, ease, and accuracy. Also, the results seem to suggest that familiarisation with ICTs such as computers can enable librarians do a lot because their capability and/or functionality has been increased.

In addition, there is also increasing availability of content in various formats. This means a good amount of movement from paper. However, librarians are faced with challenges of attitude, ICT skills, availability of ICTs, and accessibility of ICTs. Nwachukwu (2004) states that librarians must acquire relevant skills and competence in the application of ICTs. Hence, human resources development becomes fundamental. In addition, ICTs must not only be available but accessible as well.

The findings of this study were consistent with Rabina and Walczyk's (2007) findings cited earlier in the literature revealed that the adoption of information and communication technologies (ICTs) in libraries is traditionally driven by two complementary objectives: first that once new technologies are adopted, services to patrons will be improved and second, that after implementation is completed and the new ICTs have been achieved, the anticipated fiscal benefits and those associated with efficiency and productivity will begin to be realised.

5.4.4 Perception of respondents on the feasibility of ICTs for libraries

The respondents were further asked to indicate whether they were of the view that ICTs were not feasible for their libraries. The study revealed that 90% of the respondents were not of the view that ICTs were not feasible for their libraries while 10% of the respondents were of that view. These findings seem to suggest that librarians were of the view that ICTs were actually feasible for their libraries. This means that librarians have favourable attitudes towards the use and implementation of ICTs in their libraries. In addition, the results seem to suggest that librarians are willing to be trained in ICTs. However, as indicated by Chisenga (1995) this may not be easy to achieve in a situation where funds are not available to purchase the ICT equipment. In addition, ICT infrastructure may also be poor. There is also heavy tax on computers and other ICT-related equipment. The Internet service providers also charge high user fees, etc. This is against the finding that the respondents felt that ICTs were feasible for their libraries.

5.4.5 Perceptions of respondents on the impact of their attitude on use of Information and Communication Technologies

In an open-ended question, the respondents were asked to state the impact that their attitude would have on use of ICTs in their libraries. When this question was answered, the findings showed that some respondents reported that if they had positive attitude towards use of ICTs, this would improve efficient and effectiveness of service, help them keep abreast with trends in the library profession, encourage librarians not familiar with ICTs, and lead to greater usage of ICTs in libraries (Dillon and Morris, 1996).

On the other hand, other respondents reported that if they had negative attitude towards use of ICTs in their libraries, this would increase fear of ICTs among them, contribute to less usage of ICTs, and also discourage them from acquiring skills in ICTs (Sandore and Baker, 1996, Morris and Dyer, 1998).

The implication of the impact that the attitude of librarians would have whether positive or negative is that, their attitudes towards the new computerised system could ultimately determine how successful it could be. It could also determine whether the librarians are willing to be trained in ICTs or not (Swanson, 1995).

5. 5 Perceptions of respondents on factors contributing to their attitude towards ICTs

This section looks at factors that contribute to the attitudes of respondents towards ICTs. These are gender, age, employment status, and attitude of respondents.

5.5.1 Effect of gender of respondents on use of ICTs

According to the findings of this study in sub-section 4.8 of chapter 4, 93% of the respondents felt that gender never affected them in the use of ICTs while 7% of the respondents did not feel so. These findings therefore, seem to suggest that the librarians felt that gender never affected them in the use of ICTs. They also seem to suggest that in Zambian libraries, men and women have equal opportunity to use ICTs.

In this regard, the researcher is of the view that as long as one is trained in ICTs, gender will not prevent them from using ICTs. In addition, if in the library the ICTs are not only available but also accessible, the fact that one is male or female will not prevent them from using ICTs.

The findings of this study on the effect of gender are not consistent with the study results of Spacey, Goulding and Murry (2003), Rosenthal and Spiegelman (1996), and Oskamp (1990). For example, Spacey, Goulding and Murry's (2003) findings revealed that unlike in Zambia, the influence of an individual's gender, a variable frequently explored in relation to ICT acceptance and usage, was of consequence when the majority of public library staff in the UK were women. The use of ICTs such as computers by women was more problematic than that of men and women were frequently portrayed as afraid of such ICTs, alienated by the masculine culture surrounding them.

Rosenthal and Spiegelman's (1996) findings were that gender was a factor regarding the usefulness of ICTs such as the Internet. They likened this perception to the notion of such ICTs as a masculine device. They also observed that women were less confident about their skills and their ability and that men were often more overconfident than the women. Oskamp's (1990) findings were that women felt more threatened by technological change than men.

The respondents who felt that gender never affected the use of ICTs were further asked to give their reasons. The respondents reported that it was because everyone was free and had equal opportunity to use ICTs irrespective of their gender. Therefore, the use of ICTs did not discriminate based on gender as gender was not a barrier to the use of ICTs. There was also no correlation between gender and the use of ICTs because ICTs also cut across gender issues, and that people were trainable irrespective of their gender.

5.5.2 Perceptions of respondents on the effect of age of librarians on use of ICTs

In sub-section 4.9 of chapter 4, the respondents were asked whether age had an effect on their use of ICTs in their libraries. When this question was answered, 58% of the respondents felt that their age never affected them in the use of ICTs in their libraries while 42% of the respondents felt so. These findings seem to suggest that, librarians believed that their age never affected them in the use of ICTs in libraries.

Today in Zambia, there are several study avenues that have been opened, such as, distance education study programme and parallel programmes where those that missed the opportunity to enrol straight from high school have a chance to pursue their studies in Library and Information Studies at a higher level. These programmes do not discriminate based on age. In fact there are strong policies regarding equal access to learning by institutions of higher learning.

The results of this study were however not consistent with the findings of Rosenthal and Spiegelman (1996). They observed that the age of librarians had some bearing on their attitude and subsequent usage of ICTs at work. This could perhaps be explained in terms of the fact that their study on the attitude of people towards technology was done in factories and offices as opposed to libraries.

5.5.3 Perceptions of respondents that older librarians are uncomfortable to learn new skills compared to younger librarians

When this factor (age) was investigated further to establish whether the respondents felt that older librarians were uncomfortable to learn new skills compared to younger librarians, the results revealed that 91% of the respondents felt that older librarians were uncomfortable to learn new skills compared to younger librarians whereas 9% of the respondents did not feel so. The findings therefore, seem to suggest that although age itself never affected them in the use of ICTs, the respondents felt that older librarians were uncomfortable to learn new skills compared to younger librarians.

The implications of these findings are that librarians who are uncomfortable to learn new skills are likely to be replaced with those able to embrace new trends in librarianship. In other words, those uncomfortable face a challenge of fitting into the new system unless they succumb to change in order to remain afloat. This means that whoever does not keep pace with new developments may not work in the libraries. It must also be born in mind that ICTs are here and librarians have to live with them. This is perhaps why with the proliferation of Library and Information Studies programmes in Zambia, even older librarians have started going back to school in order to embrace new trends in the profession.

These findings are in conformity with Arthur (1998), and Swann's (2003) findings. For example, Arthur's (1998) findings are that unlike younger librarians, older librarians were subject to common myths such as being unwilling to learn new skills. This is because younger generations have been brought up with computers unlike their older counterparts who may not have had as much exposure to computers. Swann's (2003) findings are that older library workers lack self confidence with computers and perceived ICTs differently as compared to their younger colleagues, especially old staff who originally joined the library service because of a love of books and literature.

5.5.4 Perceptions of respondents that younger librarians rate their computer proficiency highly than older librarians

The findings are that 97% of the respondents felt that older librarians found ICTs more difficult to use than younger librarians while 9% of the respondents did not feel so. Furthermore, the findings of the study revealed that 94% of the respondents felt that younger librarians rated their computer proficiency more highly than the old librarians whereas 6% of the respondents did not feel so. These findings therefore, seem to suggest that librarians were of the opinion that older librarians found ICTs more difficult to use than younger librarians. The findings also seem to suggest that younger librarians rated their computer proficiency more highly than old librarians.

This could perhaps be explained in terms of the fact that comparatively, librarians of today are exposed to ICTs during their studies. Before the advent of computer technology at the close of the 20th century, ICTs such as computers were rare in libraries and in schools of librarianship. The basic functions of librarians then were carried out manually (Shariful and Nazmul, 2006). This means that ICTs have just come on the scene especially in developing countries like Zambia.

The argument can be made that librarians who started work a long time ago were not exposed to ICTs. These only had traditional roles and skills. There is therefore no denying that this is a new global library environment and it is one in which older librarians are still finding their way (Bichteler, 1987).

Given this situation, increasing the confidence of older librarians and providing opportunities to practice ICT skills is paramount, as the results from this study suggest that the more favourably librarians rate their computer skills, the easier the ICTs seem to use and the more frequently they would use them.

These findings agree with Rosenthal and Spiegelman's (1996) findings that in terms of computer skills, a relationship was found between age and computer proficiency, suggesting that younger librarians rated their skills more highly than their older colleagues. Moreover, they observed that positive perceptions of one's computer skills was related to the familiarity librarians had with ICT since it was used extensively at school, college and university.

Waldman (2003) states that, this is because younger generations have been brought up with computers unlike their older counterparts who may not have had as much exposure to computers. In addition, as individuals are more exposed to technology, the novelty wears off, as does anxiety and fear. People become more comfortable and less anxious and more willing to take new risks as well as learn new skills.

5.5.5 Perceptions of respondents that ICTs are recent developments to most librarians

The findings of this study revealed that 78% of the respondents were of the opinion that ICTs were so recent that most people over the age of 28 have not had the benefit of computer training in their own schooling while 22% of the respondents were not of that opinion. These findings seem to suggest that ICTs are so recent that most librarians over the age of 28 have not had the benefit of computer training in their own schooling.

As mentioned earlier, the research findings suggest that, older librarians in most public libraries were trained using traditional methods because ICTs had not yet been introduced in schools of librarianship (Shariful and Nazmul, 2006). In Zambia, some public libraries have old library staff; many of whom have since retired who never went to any school of librarianship but gained experience working with the manual system over the years. Such library staff could easily have missed the opportunity to train in ICTs and therefore, these are likely to detest the use ICTs as recent developments in their lives.

The research findings also suggest that technology is more accepted the earlier it is introduced to a person, while there is some resistance if the technology is introduced later in life. This applies to older librarians who have had technology introduced to them later in their lives. These findings agree with Swann's (2003) study findings on the recency of ICTs in the literature revealed that Information and communication technology (ICT) is so recent that most people over the age of twenty eight (28) have not had the benefit of computer training in their own schooling. He observed that older library workers lack self confidence with computers and that they perceive ICTs differently as compared to their younger colleagues.

.

5.5.6 Perceptions of respondents that older librarians fear that years of routine work could be replaced instantly with ICTs

The findings further revealed that 24% of the respondents felt that older librarians feared that years of routine work could be replaced instantly with the introduction of ICTs while 7% of the respondents did not feel so. These findings seem to suggest that the respondents felt that older librarians feared that years of routine work could be replaced instantly with the introduction of ICTs. This seems to indicate that the emergence of ICTs has transformed modes of conducting business in libraries in Zambia and has resulted in significant changes to traditional library structures to accommodate organised information and access to it.

The implication of this is that, trends in modern librarianship are changing and therefore, librarians must keep abreast with new developments by embracing change in order not to get stuck with traditional librarianship in which the basic functions of librarians are carried out manually. Technological changes pose challenges to librarians particularly those new to usage of ICTs.

However, training is likely to have a positive role to play in acquainting librarians to the changes taking place around them. Those with an extreme fear of ICTs may need specialised training prior to general ICT training if they are to lose their anxiety. Training may also indicate areas requiring improvement within a library organisation, such as increased communications during the change process.

In addition, attitudes to ICTs and their relationship to actual ICT use remains a topic of debate because the influence of positive attitudes on intentions and behaviour remains in question (Farrow, 1997).

These findings are consistent with Rosen and Weil's (2000) findings that human fear of technology may emerge because its introduction, or increase in use, appears to threaten the status quo. Due to the introduction of ICTs, there is a change in routine work happily undertaken for the past 20 years, and fear of being replaced by others who have the relevant technology skills. Rosen and Weil's (2000) conclude that change generally could bring both uncertainty and discomfort in people. This is of course with regard to job security of library staff with the advent of ICTs.

5.6 Perceptions of respondents that employment status of librarians affects use of ICTs

The findings of this study on employment status of respondents in sub-section 4.10 of chapter 4 revealed that 53% of the respondents felt that employment status of respondents with regard to position held by a librarian in the libraries affected them negatively in the use of ICTs while 47% of the respondents did not feel so. However, with particular attention to contract or permanent employment status of respondents in the library, the results revealed that 88% of the respondents did not feel that their contract or permanent employment status in the libraries negatively affected them in the use of ICTs while 12% of the respondents felt so.

These findings seem to indicate that the respondents did not believe that contract or permanent employment status of librarians negatively affected the respondents in the use of ICTs in their libraries. But with regard to position held by librarians in the libraries, such as assistant librarian, library assistant, the respondents were of the view that this affected them negatively in the use of ICTs (Quinn, 1995).

5.6.1 Perceptions of respondents that non-professional librarians are not given equal opportunity to use ICTs

With regard to employment status, the findings further revealed that in terms of position held by librarians in the libraries, 67% of the respondents were of the opinion that non-professional librarians were not given equal opportunity to use ICTs while 33% of the respondents were not of that opinion. Therefore, these findings seem to indicate that the respondents were of the opinion that non-professional librarians were not given equal opportunity to use ICTs hence, this negatively affected them in the use of ICTs.

The research seems to indicate that in certain public libraries, ICTs such as computers are only available in a few offices for the use by the head and perhaps their secretaries. Other members of staff can only have access to them with prior written permission or are not allowed even with permission. The impact therefore is that such members of staff are likely not to appreciate the usefulness of such facilities in their workplace. They would also be less willing to train in ICTs and as pointed out earlier, their attitude to ICTs might not be favourable.

In addition, as indicated by Kahan (1997), it is also common practice to see librarians with ICT skills not using them fully because they are often restricted to loaning out library materials in an automated library and/or not using their skills at all because their library operations are not automated.

5.6.2 Perceptions of respondents that tasks of librarians are different

The findings of this study further revealed that in terms of position held by librarians in the library, 95% of the respondents were of the opinion that tasks of librarians could be very different and consequently the use of ICTs might be more important to one group than the other, while 5% of the respondents were not of that opinion. In this regard, the results seem to indicate that the majority of the respondents were of the opinion that tasks of librarians could be very different and consequently the use of ICTs might be more important to one group than the other. This also negatively affected the librarians in the use of ICTs.

Regarding the above findings, it is very common for library staff in a small library without a librarian for example, to make more use of ICTs such as the Internet than library staff in a large library where the differences between professionals and non-professionals are more demarcated (Kahan, 1997).

5.6.3 Perceptions of respondents that recently qualified librarians underwent training in ICTs

Furthermore, the results of this study revealed that 93% of the respondents felt that the recently qualified librarians might have undergone computer training during study or attended professional development courses to improve their skills while 7% of the respondents did not feel so. The findings seem to indicate that the respondents felt that comparatively, recently qualified librarians might have undergone computer training during study or attended professional development courses to improve their skills.

From these findings one can state that, schools of librarianship today have an ICTs component and therefore, those graduating now at least have the skills. Workshops and seminars are also organised in institutions and through such foras, librarians acquire knowledge and skills. This knowledge acquired and skill gained could be in ICTs.

However, where such activities tend to be selective in terms of who attends, the impact is that, those who are supposed to attend are left out and therefore miss out. On the other hand, those who attend may not put to practice what they learn and hence skills are not improved. These findings seem to suggest that with regard to employment status, perhaps factors such as negative attitude to ICTs, lack of training in ICTs, time to use computers and lack of interest in ICTs could affect the use of ICTs. If the ICTs are available, accessibility of such facilities to people who may want to use them may be an issue. This view is supported by Small (2001) that it is important to find time for staff to learn and practice and to ensure that there are sufficient computers for staff to practice with.

5.6.4 Perceptions of respondents that librarians employed on contract and on permanent are not given equal opportunity to use ICTs

Furthermore, the results of this study revealed that 60% of the respondents were of the opinion that librarians on contract and on permanent employment were not given equal opportunity to use ICTs, while 40% of the respondents did not feel so. Going by these percentages, the findings seem to indicate that the respondents were of the opinion that librarians on contract and those on permanent employment were not given equal opportunity to use ICTs. This therefore negatively affected the librarians on contract in the use of ICTs. This means that those with more opportunity to use ICTs have ample time to practice and improve their skills in the use of ICTs (Goulding and Kerslake, 2004). In addition, such people are also likely to have favourable attitudes towards ICTs.

5.6.5 Perceptions of respondents that librarians employed on contract work few hours

The results of this study also revealed that 80% of the respondents were of the opinion that librarians on contract worked few hours hence used ICTs less frequently, while 20% of the respondents did not feel so. This finding seems to indicate that the respondents were of the opinion that librarians on contract worked few hours hence used ICTs less frequently. These findings were not the same in other libraries.

For example, in the University of Zambia library, librarians on contract and those on permanent employment work equal number of hours and all have equal access to ICTs. In fact, some of the librarians on contract have computers and other ICT-related facilities such as land phones on their work stations. Technology acceptance is the most important factor in determining the success or failure of an information system. Acceptance is defined as a demonstrable willingness within a user group to employ IT for the tasks it is designed to support (Dillon and Morris, 1996).

5.6.6 Perceptions of respondents that insufficient training cause librarians employed on contract to find ICTs harder to use

Furthermore, the results revealed that 71% of the respondents were not of the view that belated or insufficient training might explain why librarians on contract found ICTs harder to use, while 29% of the respondents were of that view. Although so many respondents did not answer this question, the findings seem to indicate that the respondents were of the view that belated or insufficient training might explain why librarians on contract found ICTs harder to use. Not withstanding this finding, if we go back to the university of Zambia library, librarians on contract graduated from university or college and are able to use ICTs such as computers and photocopying machines just like those on permanent employment. Both categories of staff are also sufficiently trained to use ICTs. However, the findings of this study on the effect of employment status of librarians on the use of ICTs are consistent with Kahan (1997), Goulding and Kerslake's (2004) findings.

For example, Kahan's (1997) findings are that, practices might vary particularly in those libraries where library assistants adopted a paraprofessional role and undertook responsibilities beyond issuing and returns. Staff in a very small library without a librarian, for instance might make more use of ICTs such as the Internet than staff in a large library where the differences between professionals and non-professionals are more demarcated. Kahan studied the attitudes of East Tennessee medical librarians and further observed that although they possessed some skills, as library assistants, their use of ICTs was very limited, often restricted to showing the users how to set up e-mail accounts.

In addition, Kahan's (1997) findings were that library assistants might have inferior computer skills because traditionally, their use of ICTs like computers has been limited and restricted to the use of a library management system for issuing and returning materials loaned to the users whilst librarians often have experience using databases, PCs and CD-ROMs to access information. He further found out that recently qualified librarians might have undergone computer training during study at university or attended professional development courses to improve their skills.

Goulding and Kerslake's (2004) findings were that there were some differences between those members of staff on part-time and those on full-time employment in relation to some skills in ICTs such as computers, length of time using them and frequency of use. The reasons could be that while the latter were often more recent users of ICTs at work and obviously, working fewer hours than their colleagues, they used them less frequently. Goulding and Kerslake's (2004) further observed that training was also available to a far extent for staff on full-time professional workers.

In addition simply working fewer hours in the library means less opportunity to use some ICT facilities such as computers, to practice and improve on their skills and to attend some training courses. Moreover, because librarians on permanent employment as the results seem to suggest, are presented with more opportunities to use the ICTs, they subsequently value the usefulness of ICTs more highly than those on contract while belated or insufficient training might also explain why librarians on permanent employment found ICTs such as the Internet a little harder to use.

5.7 Perceptions of respondents that their attitude affects them in the use of ICTs

According to the findings of this study in sub-section 4.11 of chapter 4, 63% of the respondents believed that their attitude affected them in the use of ICTs while 37% of the respondents did not believe that. This means that, attitudes could be positive, negative or indifference (having marginal resistance). As the results suggest, positive attitudes to ICTs will positively affect the adoption and use of ICTs while to the contrary, negative attitudes to ICTs will affect the adoption and use in libraries. These findings agree with those of Burton (1995) that attitudes were fundamental in determining the impact of ICTs.

5.7.1 Perceptions of respondents that librarians fear to be replaced with other librarians with relevant skills

When this factor (attitude) was further investigated, the results revealed that 79% of the respondents were of the opinion that they feared to be replaced with others with the relevant skills. However, 21% of the respondents were not of that opinion.

These findings seem to indicate that librarians were of the opinion that they feared to be replaced with other librarians with the relevant skills. What is common today is that, librarians irrespective of age or position are pursuing further studies in order to improve their academic credentials and in order to acquire the necessary skills so that they are not replaced. This also means that librarians are now eager to learn. The findings of this study are consistent with Morris and Dyer's (1998) findings that fear of obsolescence was more common in middle-aged workers or those near retirement who felt that their experience was negated and that there was little point in retraining since they would soon leave the job.

5.7.2   Perceptions of respondents on the effect of ICTs on their health

Sixty-eight percent of the respondents were also of the opinion that they had fears of the effect brought about by ICTs on their health such as eye strain and headaches while 32% of the respondents were not of that opinion. These findings seem to indicate that librarians were afraid of the effect brought about by ICTs on their health such as eye strain and headaches. This means that some librarians have negative attitudes towards the use of ICTs because they are afraid of such effects on their health.

The findings of this study agree with Dakshinamurti's (1985) findings that in the early days of computerisation in libraries, library personnel reported eye strain, backaches and headaches resulting from automation. He further observed that although barriers and filters had been introduced to minimise the glare of computer screen; people still suffered from a carpal tunnel syndrome resulting from repetitive motions such as using a keyboard which led to numbness or tingling in the hands.

5.7.3   Perceptions of respondents that ICTs cause uncertainty and discomfort in librarians

Furthermore, the findings revealed that 67% of the respondents believed that ICTs brought uncertainty and discomfort in them, whereas 33% of the respondents did not believe that. These findings seem to indicate that librarians believed that ICTs bring uncertainty and discomfort in them in terms of job security. Indeed, when new technology is being introduced, it causes uncertainty and discomfort in certain library staff with regard to their security on the job.

The simple explanation could be that some library staff not conversant with ICTs may fear to make a mistake and get fired. Mainly these are those trained using traditional practices. As indicated by Hudson (1999), those about to retire may also not be very willing to accept change when they are almost leaving.

Hudson (1999) also perceived value of the computer-based information as having a strong effect on the use and learning habits. Some of the perspectives of librarians observed are fear of losing their jobs. In public libraries for instance, change may involve moving to a more modern library management system or acquisition of CD-ROMs and e-journals all of which might prove very intimidating for staff in public libraries with little or no prior experience of such innovations. He further observed that generally, in a period of general uncertainty it is worrying for library staff and sometimes it may provoke hostility or resistance to the introduction of new technologies.

5.7.4 Perceptions of respondents that ICTs create additional tasks to be performed by librarians in a day

Similarly, 53% of the respondents felt that ICTs did not create additional tasks to be performed in a day (e.g. logging PCs on and off), while 48% of the respondents felt so. These findings seem to indicate that librarians felt that ICTs never created additional tasks to be performed by them in a day (e.g. logging PCs on and off).

It could be argued that, in libraries, certain tasks such as shelving are routine and in a similar vein, logging off of computers in libraries that have these facilities is something routine and the librarians can not consider it as additional tasks.

The findings of this study agree with findings of Quinn (1995), and Jones et al. (1999); that more information and communication technology result in greater demand from the library users. For example, having to learn to use ICTs whilst working or simply the creation of additional tasks to be performed in a day such as, switching computers on and off or signing them on for use by the public. They further observed that increased workload for the same level of pay created hostility and that the introduction of technology also added more responsibilities to a job but, ironically, this was not reflected in the pay cheque.

Similarly, 75% of the respondents felt that there was more demand from the users as a result of ICTs (e.g. having to learn to use the ICTs while working), while 25% of the respondents did not feel so. These findings seem to indicate that librarians felt that there was more demand from the users as a result of ICTs (e.g. having to learn to use the ICTs while working). Given this scenario, the issue of skill acquisition and competence in the use of ICTs is significant, particularly in the information age in which librarians find themselves. Librarians must acquire competence to be relevant in their profession, in which all roles and responsibilities are performed with the use of computers.

The results of this study are consistent with those of Morris and Dyer (1998), Quinn (1995), Jones et al (1999), and Dakshinamurti (1985). Morris and Dyer (1998) found out that, the introduction of technology implied increasing the amount of work which still has to be performed in the same amount of time.

On the other hand, the results of this study identified other factors that the respondents felt affected them in the use of ICTs such as poor Internet connectivity, interruption of power supply, obsolete ICT facilities, lack of funds to purchase ICT equipment, consistent breakdown of ICT equipment, inadequate ICT facilities in libraries, technophobia among some librarians, lack of training in ICTs among librarians, resistance to change by most librarians, and restricted use of ICTs to selected librarians.

All things being equal, the possible explanation is that, the relationship between training and attitudes may be less controversial and training seems to be an appropriate technique to change the negative attitudes of librarians towards ICTs. Given that in this study, the attitude of librarians was reported to affect use of ICTs, attitudes to ICTs remain an appropriate area for further research since their relationship to actual ICT use remains a topic of debate (Fallow, 1997). Although this study established that positive attitudes are desirable and some research would seem to also suggest that positive attitudes to ICTs are desirable on the part of librarians, their influence on intentions and behaviour remains in question (Dillon and Morris 1996).

5.8 Influence that training of librarians in ICTs has in their use

The findings of this study on the influence of training of librarians on use of ICTs revealed that 83% of the respondents felt that training in ICTs influenced them to use ICTs in their libraries, while 17% of the respondents did not feel so. These findings seem to suggest that training of librarians in ICTs influence librarians to use ICTs in libraries. In Zambia, as stated earlier, the ICT component is integrated in the Library and Information Studies programme for those who pursue their studies in librarianship. These research findings on the influence of training of librarians in ICTs are consistent with the findings of Igbaria et al (1995) that training in ICTs does exert an influence on their use in the information management systems.

5.8.1 Perceptions of respondents on the influence of training in the use of ICTs

Furthermore, the results in sub-section 4.12 of chapter 4 revealed that the majority (77%) of the respondents felt that training in ICTs influenced their perception to use ICTs in their libraries. These findings seem to indicate that the respondents felt that training in ICTs influence theirperception to use ICTs in their libraries. This means that once the librarians are trained to use the ICTs, they will be competent enough and willing to use them.

This would also change the negative perception about ICTs that other librarians exhibited in this study. This change of perception is also likely to have beneficial effects on librarians and their reactions to ICTs. They would then begin to appreciate the usefulness of ICTs in their work. The findings of this study on the influence of training of librarians in ICTs also agree with those of Igbaria et al (1995) about the positive perception towards the new system observed in a group of university students in Nigeria.

5.8.2 Perceptions of respondents on the influence of training in ICTs in enhancing their skills in use of computers.

Similarly, the results revealed that 96% of the respondents were of the opinion that training in ICTs enhanced their computer skills in their libraries, while 4% of the respondents were not of that opinion.

These findings seem to suggest that the respondents were of the opinion that their training in ICTs would enhance their skills in the use of computers in their libraries. This means that training would be important in as far as the acquisition of ICT skills is concerned. It is therefore important that training must be relevant, timely and adequate. In addition, training must not be a one-off exercise, but an ongoing practice (Williamson, 1993).

After training, librarians must demonstrate their competence through practice. Training must give librarians the required knowledge and skills for the tasks ahead. The findings of this study on the influence of training of librarians in the enhancement of their skills in ICTs agree with the findings of Igbaria et al (1995), and Williamson (1993) that external educational and training programmes designed to increase the individual's knowledge about computers and their operations must be beneficial in enhancing computer skills. Williamson (1993) further observes that training must not take place for the sake of training. It must provide the necessary skills, be of the right amount, of good quality and may have to combat fears, as well as promote understanding and confidence in using ICTs.

5.8.3 Perceptions of respondents on the influence of training in ICTs in reducing their attitudinal barriers to ICTs

The findings of this study also revealed that the majority (97%) of the respondents believed that training in ICTs reduced their attitudinal barriers to the acceptance of ICTs whereas 23% of the respondents did not feel so. These findings seem to indicate that the respondents believed that their training in ICTs reduce their attitudinal barriers to the acceptance of ICTs in libraries. From these findings, it could be argued that once librarians are trained in ICTs, this should give them the required knowledge and skill. Therefore, this should generally be acknowledged as essential in wading off fear they might have when ICTs are being adopted in libraries. In addition, training will ensure successful change from the old to the new system. It must also be remembered that people will normally resist change. These findings on the influence of training in ICTs in reducing attitudinal barriers people might have towards ICTs are consistent with those of Igbaria et al (1995) in the literature reviewed.

5.8.4 Perceptions of respondents on the influence of training in ICTs in promoting their usage of ICTs.

Furthermore, the findings revealed that the majority 97% of the respondents felt that their training in ICTs promoted their usage of ICTs in their libraries while 3% of the respondents did not feel so. Therefore, the findings seem to indicate that the majority of the respondents felt that their training in ICTs promoted their usage of ICTs in their libraries. It is therefore important to recognise that training is paramount in as far as usage of ICTs is concerned. But, it should be pointed out that, training of librarians in ICTs alone may not promote usage. What is needed is for those trained to put to practice, the knowledge acquired and the skills gained from the training. As Williamson (1993) puts it, it is vital that staff have the opportunity for hands on practice during and after training.

However, the findings of this study on the influence of training in ICTs in promoting usage of ICTs with regard to full utilisation of ICTs such as computers have other unintended consequences such as anxiety or technophobia (Brosnan, 1997).

He observes that the relationship between training and computer anxiety or technophobia, for example suggests that while computer courses and training might promote usage, they do so without actually reducing anxiety such that there are many computer users who are computer anxious. Whilst their anxiety does not prevent computer usage, it does prevent the full utilisation of the potential capacity of the computer.

5.8.5 Perceptions of respondents on the influence of training as essential in introducing positive change to ICTs.

Seventy-eight percent of the respondents were of the opinion that their training in ICTs was essential in introducing positive change in the workplace. These findings seem to indicate that the respondents were of the opinion that their training in ICTs was essential in introducing positive change to acceptance of ICTs in their workplace. As informed by the findings of this study, it is only training that can change the mind set of some librarians. Without training in ICTs, the mind set of some librarians would always be difficult to change from that of the traditional or custodial librarian to that of the modern librarian living in the electronic age.

The findings of this study on the influence of training in ICTs as essential in introducing positive change to acceptance of use of ICTs were consistent with those of Gilmore (1998), Cooper (1998), and Jones et al (1999). The researchers felt that training was generally acknowledged to be essential in introducing successful change in the work place.

5.8.6 Perceptions of respondents on the influence of training ICTs as a key strategy in overcoming any resistance to change.

Furthermore, the findings of this study revealed that the majority (80%) of the respondents felt that their training in ICTs was a key strategy in overcoming any resistance to change. The findings seem to suggest that the majority of the respondents felt that their training in ICTs was a key strategy in overcoming any resistance that the introduction of ICTs might bring in libraries. The research also suggests that, training is also essential in providing librarians with the requisite skills. This means that once librarians are trained in ICTs, they will gladly accept the technology introduced because they will have the knowledge and skill to use them. However, as Rosen and Weil (2000) state, librarians will be frightened of new technologies introduced if they are not trained.

5.8.7 Perceptions of respondents on the influence of training in ICTs as a means of building their morale

Similarly, 97% of the respondents felt that their training in ICTs was a means of building their morale in their libraries, while 3% of the respondents did not feel so. These findings seem to indicate that the majority of the respondents therefore, felt that their training in ICTs was a means of building their morale in their libraries. The research also suggests that training is paramount as it will serve to encourage librarians to gladly and competently use ICTs. They will certainly not have the fear because training will equip them with the required knowledge and skills. Moreover, librarians are also likely to be in a better position to handle simple trouble shooting tasks.

With particular regard to the findings of this study, Brosnan (1998) asserts that technophobes-those with an irrational fear of computers would be helped if they attend an anxiety reduction programme before commencing any formal training on a specific application and that good training would always result in improved motivation and more able and more competent staff.

5.8.8 Perceptions of respondents on the influence of training in ICTs in their involvement and satisfaction with ICTs.

The results further revealed that the majority 80% of the respondents were of the view that their training in ICTs influenced their involvement and satisfaction with ICTs. These findings seem to indicate that the majority of the respondents were of the view that training of librarians in ICTs influences their involvement and satisfaction with ICTs. For example, when one is knowledgeable about ICTs, they will enjoy working with them. This may even bring about job satisfaction. However, training ensures that these people are competent in ICTs. These findings on the influence of training in ICTs in ensuring that librarians are involved and satisfied with use of ICTs agree with Torkzadeh et al (1999) that user training influences user involvement, user satisfaction, user confidence, and system usage. Furthermore, they hold the view that training assists in reducing the stress brought on by technological change.

5.9   CONCLUSION AND RECOMMENDATIONS

This chapter has discussed the findings that were presented in chapter four. The discussion was based on levels of automation in libraries, training of librarians in the use of ICTs, the perception of librarians about the use of ICTs, factors affecting their use of ICTs, and the influence of training on use of ICTs.

5.9.1   Conclusion

The findings of this study revealed that librarians had training in ICTs received at university or college during their formal training. Also, training of librarians was vital as it influenced them to use ICTs in their libraries. Furthermore, the perception of librarians towards use of ICTs in libraries was reported to be generally positive as they consented to most of the attitude items provided.

The findings further revealed that certain factors related to age, employment status, and their attitudes affected them in the use of ICTs. For instance, older librarians were reported to be uncomfortable to learn new skills compared to younger librarians and feared that years of routine work could be replaced instantly with the introduction of ICTs. ICTs were also so recent that most librarians over the age of 28 have not had the benefit of computer training in

the course of their study. Younger librarians also rated their computer proficiency highly than older librarians.

Non-professional librarians were not given equal opportunity to use ICTs. Also, the tasks of librarians were very different and consequently the use of ICTs was reported to be more important to one group of librarians than the other. Furthermore, ICTs are recent and recently qualified librarians are trained in ICTs. The study also revealed that librarians employed on contract were given less opportunity to use ICTs and they also worked fewer hours than those on permanent. Librarians on contract also had belated or insufficient training hence found ICTs harder to use. Some librarians were afraid of being replaced by librarians with relevant skills, they also feared the effect brought about by ICTs on their health.

Other librarians also believed that ICTs brought uncertainty and discomfort in them with regard to their job security. Information and Communication Technologies also brought more demand on librarians such as having to learn to use the ICTs whilst working.

However, the study revealed that ICTs never create additional tasks to be performed by librarians in a day. It further revealed that training was vital in influencing use of ICTs. Positive attitude towards the use of ICTs was reported to improve efficient and effectiveness of service, librarians would also keep abreast with library trends in their profession. In addition, librarians not familiar with ICTs would be encouraged to use them and lead to greater usage of ICTs in libraries.

Finally, it was realised that negative attitude would increase fear of ICTs among librarians, contribute to less usage of ICTs and consequently, discourage librarians from acquiring skills in ICTs.

5.9.2 Recommendations

In view of the findings and conclusions of the study, the researcher makes the following recommendations:-

1. More emphasis should be placed on improving the attitudes of librarians towards the use of ICTs. This could be done by ensuring that librarians' knowledge in ICTs, level of awareness of technologies, and recency in ICT training are taken care of.

84

2. Equal opportunity of access to ICTs should also be given to all irrespective of gender, age, and employment status of librarians in the libraries. This could ensure that librarians accept and fully own the new technology introduced. This could be done by libraries acquiring more ICT equipment for use by every user.

3. To ensure successful adoption and implementation of ICTs, it is recommended that the users of the new system are involved in the automation of the libraries.

4. The application of ICTs in libraries could help to resolve numerous problems including the acute problem of space in some libraries. It is therefore recommended that a funding policy is put in place for training and procurement of ICT equipment.

5. It is also recommended that ICT should be a core component of formal library education in Zambia. Therefore, library schools need to upgrade their syllabi regularly according to the job market and future requirements so that the trained should have relevant skills for the tasks ahead.

REFERENCES

Adams, G. R. & Schvaneveldt, J. D. 1992. **Understanding research methods.** New York: Longman.

Ajzen, I. 1991. The theory of planned behaviour. *Org. Hum. Decis. Process*, 50, 179-211.

Ajzen, I. & Fishbein, M. 1980. **Understanding attitudes and predicting social behaviour.** Englewood Cliffs, NJ: Prentice-Hall.

Armitage, C. J. & Corner, M. 2000. Efficacy of the theory of planned behaviour: a meta-analytic review. *British Journal of Social Psychology*, 40, 471-499.

Arthur, G. 1998. The graying of librarianship: implications for academic library managers. *The Journal of Academic Librarianship*, 24, (4), 323-7.

Bagozzi, R. P. Davis, F. D. & Warshaw, P. R. 1992. Development and test of a theory of technological learning and usage. *Human Relations*, 45 (7) 660-686.

Best, J. W. 1981. **Research in education** (4th ed.) New Jersey: Prentice-Hall.

Bichteler, J. 1987. Techno stress in libraries: causes, effects and solutions. *The Electronic Library*, 5, 282-7

Bill, H. K. & Wanyama, P. 2001. Automation and its impact on the job satisfaction among staff of the Margarete Thatcher library. *Moi University Library Management*, 22, (6/7) 303-10.

Brosnan, M. 1998. **Technophobia: the psychological impact of information technology.** London: Routledge.

Burton, P. 1995. **Information technology and society: implications for the information professions.** London: Library Association.

Chifwepa, V. 2006. **Development of a model plan for the application of information and communication technology in distance education at the University of Zambia**. PhD thesis, Department of Library and Information studies, University of Zambia.

Chisenga, J. 1995. The status of information technology in Zambian libraries. *African Journal of Library, archives and Information science*, 5 (1), 19-24.

Coulson, S. 2000. **A provisional study of the strategic management of three public library authorities working towards new library: the people's network**. MSc thesis, Department of Information Science, Southborough University.

Dakshinamurti, G. 1985. Automation's effects on library personnel. *Canadian Library Journal*, 42 (6), 343-51.

Dillon, A. & Morris, M. 1996. User acceptance of information technology: theories and models. *Annual Review of Information Science and Technology*, 31 (3), 3-32.

Engstrom, M. 2001. Use and development of information technology at two university libraries in Costa Rica. Available from: http://mmm.abm.uli.se/publikationer/2/200/86.pdf [Accessed 29 May 2009].

Evald, P. 1996. Information technology in public libraries. *Program*, 30 (2), 121-31.

Fallow, J. 1997. Management of change: technological developments and the human resource issues in the information sector. *Journal of Management Psychology*, 12 (5), 319-24.

Fine, S. 1986. Technological innovation, diffusion and resistance: an historical perspective. *Journal of Library Administration*, 7 (1), 83-108.

Fishbein, M. & Ajzen, I. 1999. **Belief, attitude, intention and behaviour: an introduction to theory and research**. Addison-Wesley: Boston, MA.

Gilmore, E. 1998. Impact of training on information technology: attitudes of university faculty. Available from: http://www.tcet.unt.edu/research/dissert/gilmore [Accessed 21 May 2009].

Goulding, A. & Kerslake, G. 2004. **The power of influence: what affects public library staff's attitude to the Internet?** Loughborough: Loughborough University.

Hudson, M. P. 1999. Conflict and stress in times of change. *Library Management*, 20 (1), 25-8.

Hale, J. L. Householder, B. J. & Greene, K. L. 2003. The theory of reasoned action: In J. P. Dillard and M. Pfau (Eds.). **The persuasion handbook: development in theory and practice.** Thousand Oaks, CA: Sage.

Idowu, A. 1997. Use of computerized information systems: an analysis of the experiences and attitudes of research and university librarians in Nigeria. University of Ibadan, an unpublished PhD thesis. Available from:

http://www.emeraldinsight.com/Insight/ViewContentsServlet;jsessionid=689F9130B2B67E [Accessed 29 may 2009].

Igberia, M. Zinatelli, N. & Cragg, P. 1997. Personal computing acceptance factors in small firms: a structural equation model. *MIS Quarterly*, 21 (3), 241-279.

Isaac, S. & Michael, W. (Eds.). 1982. **Handbook in research and evaluation.** San Diego: Edits.

Jones, B. Sprague, M. Nankivell, C. & Richter, K. 1999. Staff **in the new library: skill needs and learning choices: Findings from training the future, a public library research project.** London: British Library Research and Innovation Report 152.

Kahan, R. 1997. Attitudes of East Tennesse Medical librarians about evolving computer information technology. *Tennessee Librarian*, 49 (1), 19-26.

Leedy, D. P. & Ormrod, E. J. 2001. **Practical research: planning and design.** New Jersey: Merrill Prentice Hall.

Lilley, D. B. & Trice, R.W. 1989. **A history of information science**, 1945-1985. San Diego: academic Press.

Line, M. B. 1982. **Library surveys: an introduction to the use, planning procedure, and presentation of surveys.** London: Clive Bingley.

Liguire, W. 1993. Attitudes towards automation/innovation in academic libraries. *The Journal of Academic Librarianship*, 8 (6), 344-55.

Miller, K. 2005. **Communications theories: perspectives, processes, and contents.** New York: McGraw-Hill.

Morris, A. & Dyer, H. 1998. **Human aspects of library automation.** Gower/Alderspot.

Mundy, P. & Sultan, J. 2001. Information Revolutions. Technical Centre for Agricultural Rural Cooperation. Wageningen: CTA.

Nachimias, D. & Nachimias, C. 2003. **Research methods in the social sciences.** 2nd ed. New York: St. Martin's Press.

Nawe, J. 1995. Work-related stress among the library and information workforce. *Library Review*, 44 (6), 30-7.

Nwachukwu, V. N. 2004. Computer skill competencies among academic librarians: an imperative for the computerisation of Nigerian University libraries. *The Nigerian Library Link* 2 (1), 130-1.

Obodoeze, N. 2007. Computer skill among librarians in academic libraries in Ondo and Ekiti States, Nigeria. Available from: http://www.thefreelibrary.com/Computer+skill+among+librarians+in+academic+libraries+....

Oskamp, S. 1990. **People's reactions to technology in factories, offices and aerospace.** Newbury Park, CA: Sage Publications.

Owoyemi, S. O. 2001. **Basic knowledge in computer and computing.** Paper presented at 21st Annual Seminar/workshop on Software Choice: Parameters for Cataloguing in Nigerian Libraries, October 21 to 27, 2007.

Powell, R. R. 1997. **Basic research methods for librarians**. Greenwich, Conn: Ablex.

Quinn, B. 1995. Reducing stressful aspects of information technology in public services. *Public and Access Services Quarterly,* 1 (4), 1-34.

Rabina, D. L. & Walczyk, D. J. 2007. Information professionals' attitude towards the adoption of innovations in every day lives. **Information Research** [Internet], 12, (4). Available from: http://InformationR.net/ir12-4/colis.12.html [Accessed 13 march 2009].

Rosen, L. D. & Weil, M. 2000. Results of our 49 month study of business attitudes show clerical/support staff, managers and executives using more technology at work and at home and becoming more hesitant towards new technology [Internet], Available from: www.technostress.com/busstudy2000.htm [Accessed 20 march 2009]

Rosenthal, M. & Spiegelman, M. 1996. Evaluating use of the Internet among academic reference librarians. **Internet Reference Services Quarterly**, 1, (1), 53-61.

Rowley, J. 1998. **The electronic library**. London: Library Association publishing.

Sandore, B. & Baker, B. 1996. Attitudes towards automation: how they affect the services libraries provide. *Proceedings of the 49*th *Asis Annual meeting,* 23, 291-99.

Shariful, I. & Nazmul, I. 2006. Information and communication technology (ICT) in libraries: a new dimension in librarianship. *Asian Journal of Information Technology,* [Internet], 5 (8), pp. 809-817. Available from: http://www.medwelljournals.com/fulltext/ajit/2006/809-817.pdf [Accessed 10 March 2009].

Sheppard, B. H. Hartwick, J. & Warshaw, P. R. 1988. The theory of reasoned action: a meta-analysis of past research with recommendations for modifications and further research. *Journal of Consumer Research,* 15, 325-343.

Small, G. S. 2001. Making the training work. *Public Library Journal,* 16 (4), 136-8.

Sorensen, S. A. 1990. Professional identity and personal communication. *Bibliotek*, 70 (22), 700-95.

Spacey, R. A. Goulding, A. & Murry, I. 2003. ICT and change in UK public libraries: does training matter? [Internet], 24 (1/2), 61-69. Available from:

http://www.emeraldisight.com/Insight/viewcontentsservlet;sessionid=EC6CE196F [Accessed 13 March 2009].

Spender, D. 1995. **Nattering on the Net: women power and cyberspace.** Melbourne: Spinifex Press.

Swann, D. 2003. ECDL for educators: ICT skills training in context. *Computer Education*, 103, 16-17.

Swanson, E. B. 1982. Measuring user attitudes in MIS research. *A Review. Omega* 10 (2), 157-167.

Sykes, P. 1995. Automation and non professional staff at the polytechnic of the South Bank. *Training and Education*, 3 (3), 50-6.

Taylor, S. & Todd, P. 1995. Understanding information technology usage: a test of competing models. *Information Systems Research*, 6 (2), 144-76.

Torkzadeh, R. Pflugheft, K. & Hall, L. 1999. Computer self efficacy, training effectiveness and user attitudes: an empirical study. *Behaviour and Information Technology*, 18 (4), 299-309.

Usun, S. 2004. Factors affecting the application of information and communication technologies (ICTs) in distance education: a case of Turkey. [Internet], Available from: http://tojde.anadolu.edu.tr/tojde13/pdf/usun.pdf_pdf.pdf [Accessed 2 March 2009].

Venkatesh, L. G. & Davis, F. D. 2000. A theoretical extension of the technology acceptance model: four longitudinal field studies. *Management Science*, 46 (2), 186-204.

Waldman, M. 2003. Freshmen's use of library electronic resources and self-efficacy. Information Research, 150 [Internet], Available from: http://informationr.net/ir/8-2/paper 150.html [Accessed 12 March 2010].

Williamson, M. 1993. **Training needs analysis**. London: Library Association.

Winter, S. J. Chudoba, K. & Gutek, B. A. 1998. Attitudes towards computers: when do they predict computer use? *Information Management*, 34 (5), 275-84.

Woodhouse, S. & Baigent, H. 2002. People's network. *Library Association Record*, 104 (1), 18.

Yang, Y. & Cornelious, L. F. 2005. Preparing instructors for quality online instruction. Online *Journal of Distance Learning Administration*, 8 (1), Spring. [Internet], Available from: http://www.westga.edu/%Edistance/ojdla/spring81/yang81.htm [Accessed 13 March 2009].

Appendix 1: Questionnaire

The University of Zambia
School of Education
Department of Library and Information Studies
P.O Box, 32379,
LUSAKA.

Dear respondent,
I am a postgraduate student conducting a survey to determine the attitudes of librarians towards use of information and communication technologies (ICTs) in Zambia as part of my research for a Master of Library and Information Studies at the University of Zambia. I am happy that you have been selected to fill in the questionnaire and I will be very grateful if you can take a few minutes to complete the questionnaire. Much as the results of the study will be used in my studies, it is hoped that the findings of this study will be beneficial to libraries in Zambia.

Your confidentiality is assured. Whatever information you provide will be held in confidence and used only for the purpose it is intended.
I sincerely appreciate your co-operation.

Boniface Banda.

ATTITUDES OF LIBRARIANS TOWARDS THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN ZAMBIA.

INSTRUCTIONS
Please just tick [√] in the brackets or write your answer in the spaces provided

SECTION A: Background Information

1.   Gender?   a.   Male [   ]   b.   Female   [   ]

2.   What is your age...

3.   Highest educational qualification obtained?..................................

4.   Designation at work...

5.   Length of service?
     a.   Less than one year   [   ]
     b.   1 to 4 years   [   ]
     c.   5 to 9 years   [   ]
     d.   10 years and above   [   ]

6.   Please, indicate your employment status at your institution.
     a.   Contract   [   ]   b.   Permanent   [   ]

SECTION B: Levels of automation in libraries

7.   To what extent are your library operations automated?
     b.   Partially   [   ]   b.   Fully [   ]

8. What operations of the library are automated?
    a. Cataloguing   [   ]
    b. Classification   [   ]
    c. Circulations   [   ]
    d. Reference   [   ]

    e. Other (Specify)...

9. How long have your library operations been automated?
    a. Less than a year [   ]   b. 1 to 2 years [   ]
    c. 3 to 4 years   [   ]   d. 5 to 6 years [   ]
    e. 7 years and above [   ]

10. How was the automation done?
    a. User involvement [   ]
    b. No consultation   [   ]
    c. Imposed   [   ]

SECTION C: Use of Information and Communication Technologies (ICTs) in libraries

11. Which of the following ICTs are available in your library? (Tick as many as apply).
    a. Computers   [   ]
    b. Photocopying machines [   ]
    c. Printers   [   ]
    d. Scanners   [   ]

    e. Other (Specify)...

12. Do you use ICTs such as computers in your library?
    a. Yes [   ]   b. No [   ]

    If your answer to question 12 is (No), skip question 13 and proceed to questions 14 and 15.

13. What do you use computers for in your library?
   a. Cataloguing of library materials   [   ]
   b. Classification of library materials   [   ]
   c. Circulation control of library materials [   ]
   d. Reference services   [   ]
   e. E-mail services   [   ]

   f. Other (Specify)..

14. If your answer to question 12 is (No), where do you use computers?
   a. Home [   ]   b. Internet café [   ]

   c. Other (Specify)..

15. What reasons do you have for not using computers in your library?
   ....
   ....
   ....

SECTION D: ICT literacy levels of librarians

16. Have you ever had any training in the use of ICTs?
   a. Yes [   ]   b. No [   ]

17. If your answer to question 16 is (Yes), what kind of training did you have in ICTs?
   a. None   [   ]
   b. Certificate of attendance [   ]
   c. College certificate   [   ]
   d. College diploma   [   ]
   e. University degree   [   ]

   f. Other (Specify)..

18. Was the training adequate for?
    a.   Yes   [   ]   b.   No   [   ]

19. What are your ICT literacy levels?
    a.   Expert   [   ]   b.   Above average   [   ]
    c.   Average   [   ]   d.   Beginner   [   ]
    e.   None   [   ]

SECTION E: Perceptions of librarians towards use of ICTs in libraries

20. What is your perception towards use of ICTs in your library?
    a.   Negative   [   ]   b.   Positive   [   ]

    If your answer to question 20 is (positive), skip question 21 and continue from question 22.

21. If your answer to question 20 is (Negative), please, indicate which of the following reasons are applicable. (Tick as many as apply).
    a.   Lack of time to use ICTs [   ]
    b.   Lack of training in ICTs [   ]
    c.   Lack of access to ICTs   [   ]
    d.   Lack of interest in ICTs [   ]
    e.   Other (Specify)...

22. How do you rate your levels of perception on the following statements?

    i)   ICTs affect the staffing levels of librarians in the library.
         a.   Agree   [   ]
         b.   Strongly Agree   [   ]
         c.   Disagree   [   ]
         d.   Strongly Disagree   [   ]

ii)   Data received through print sources is authentic compared to e-
        resources.
    a.   Agree   [   ]
    b.   Strongly Agree   [   ]
    c.   Disagree   [   ]
    d.   Strongly Disagree [   ]

iii)   ICTs offer more efficient ways to carry out work in the library.
    a.   Agree   [   ]
    b.   Strongly Agree   [   ]
    c.   Disagree   [   ]
    d.   Strongly Disagree [   ]

iv)   ICTs are not feasible for our library.
    a.   Agree   [   ]
    b.   Strongly Agree   [   ]
    c.   Disagree   [   ]
    d.   Strongly Disagree [   ]

23.   What impact can the attitude of librarians have on use of ICTs in your
       library?
       ....
       ....
       ....

**SECTION E: Factors affecting use of Information and Communication
Technologies in libraries**

24.   Do you think gender of librarians (Male or female) affects use of ICTs
       in your library?
       a. Yes   [   ]   b.   No   [   ]

       Please, give reasons for your answer to question 24.
       ....
       ....

25. Do you think the age of librarians affects use of ICTs in your library?
    a.   Yes   [   ]   b.   No   [   ]

26. If your answer to question 25 is (Yes), how does the age of librarians affect use of ICTs in your library? (Tick as many as apply).

    a.   Older librarians are uncomfortable to learn new skills
          Yes   [   ]   No   [   ]

    b.   Older librarians find computers more difficult to use than younger librarians   Yes   [   ]   No   [   ]

    c.   Younger librarians rate their computer proficiency more highly than older librarians   Yes   [   ]   No   [   ]

    d.   Younger librarians used ICTs extensively at school, college and university, hence are more familiar with them
          Yes   [   ]   No   [   ]

    d.   ICT is so recent that most librarians over the age of 28 have not had the benefit of computer training in their own schooling
          Yes   [   ]   No   [   ]

    e.   Older librarians fear that years of routine work could be replaced instantly with the introduction of ICTs
          Yes   [   ]   No   [   ]

27. Do you think employment status with regard to position a librarian holds in the library effects use of ICTs in your library?

    Yes   [   ]   No   [   ]

28. If your answer to question 27 is (Yes), how does the position held by a librarian in your library affect use of ICTs? (Tick as many as apply).

    a. Non-professional librarians are not given equal opportunity to use ICTs in the library   Yes [   ]   No [   ]

    b. Tasks of librarians are different and consequently the use of ICTs may be more important to one group than the other
    Yes [   ]   No [   ]

    c. Recently qualified librarians might have undergone computer training during their study or attended professional development courses to improve their skills Yes [   ]
        No [   ]

29. Do you think contract/permanent employment status of librarians affects use of ICTs in your library?   Yes [   ]   No [   ]

30. If your answer to question 29 is (Yes), how does employment status of librarians affect use of ICTs in your library? (Tick as many as apply)

    a. Librarians employed on contract and on permanent are not given equal opportunity to use ICTs in the library
    Yes [   ]   No [   ]

    b. Librarians employed on contract work few hours hence use ICTs less frequently   Yes [   ]   No [   ]

    c. Belated or insufficient training might explain why librarians employed on contract find ICTs harder to use
    Yes [   ]   No [   ]

31. Do you think the attitude of librarians affect the use of ICTs in your library?   Yes [   ]   No [   ]

32. If your answer to question 31 is (Yes), how does the attitude of librarians affect the use of ICTs in your library? (Tick as many as apply).

   a.   Librarians fear to be replaced with other librarians with relevant skills Yes [   ]   No [   ]

   b.   Librarians have fears of the effect of ICTs on their health such as eye strain, headaches, etc   Yes [   ]   No [   ]

   c.   ICTs bring uncertainty and discomfort in librarians in terms of job security Yes [   ]   No [   ]

   d.   ICTs create additional tasks to be done by librarians in a day such as logging on and off of computers   Yes [   ]   No [   ]

   e.   ICTs bring more demand on librarians such as having to learn how to use them whilst working   Yes [   ]   No [   ]

33. Do you think training of librarians in ICTs influences their use?
   a.   Yes [   ]   No [   ]

34. If your answer to question 33 is (Yes), how does the training of librarians in ICTs influence the use of ICTs? (Tick as many as apply).

   a.   Training influences the perception of librarians to use ICTs in the library Yes [   ]   No [   ]

   b.   Training enhances the computer skills of librarians
         Yes [   ]   No [   ]

c. Training reduces the attitudinal barriers of librarians to the acceptance of ICTs Yes [ ] No [ ]

d. Training of librarians may promote usage of ICTs
Yes [ ] No [ ]

e. Training of librarians is essential in introducing positive change in the library Yes [ ] No [ ]

f. Training is a key strategy in overcoming any resistance to change Yes [ ] No [ ]

g. Training of librarians is a means of building their morale
Yes [ ] No [ ]

h. Training influences the librarians' involvement and satisfaction with ICT Yes [ ] No [ ]

35. Please, list other factors that you think affect the use of ICTs in your library...
....
....

END
THANK YOU FOR YOUR CO-OPERATION