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## A Study on Perception of Librarian's Job Prospects\*

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### ABSTRACT

The purpose of this study is to investigate awareness of librarian's job prospects, and to do this a survey was conducted with 502 college students in 14 Departments of Library and Information Science around Korea and 753 librarians in libraries and related agencies. The study results are as follows. First, satisfaction with educational curriculum was higher in students than librarians. Second, both students and librarians regarded workplace based practical training as employment requirements and also evaluated certifications and academic performance as important requirements. Third, both groups asked that information on employment rates be available in a timely manner, and perceived that the librarian's job prospects were not bright. Therefore, in order to improve employment of librarians, it will be necessary to establish a job information system, reorganize the current educational curriculum into a practice-oriented curriculum, and introduce the national curriculum statements (NCS)-based curriculum.

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## 1. Introduction

Since the 1990s, the economic growth from quantitative input has shown limitations due to the enhanced industrial structure. In an effort to address the issue, there is a growing interest in the utilization of human resources and the prospect of manpower demand and supply. In particular, since the primary purpose of the Department of Library and Information Science is to train librarians, it is necessary to determine the current status of human resources in libraries and related fields, and create strategies in manpower demand and supply in relation to human resources training and utilization, along with and supportive legal measures.

Noh, Ahn, and Oh (2013) suggested that effective human resource development in librarian training requires data on the current status of human resources in libraries and related industries, as well as the strategies in manpower demand and supply in relation to human resources training and utilization that is based on the survey results, and supportive legal measures. The study also conducted basic

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research on policymaking in enhancement of workforce (e.g., basic statistics on employment status, comprehensive analysis of job market and related issues). It analyzed the current status regarding policy environment including social environment, related systems and laws, and human resource training, and conducted a survey on demands for librarians in libraries in the analysis of needs in the field. However, the interest in employment status with respect to Department of Library and Information Science is a recent phenomenon; little research has been conducted on the subject.

The human resource development in librarian training requires systematic strategies in manpower supply and demand based on the analysis of the manpower demand and supply status, with a focus on related industries first, as well as supportive legal measures.

However, challenges exist with regards to effective human resource development due to the lack of basic research for policymaking (e.g., lack of basic statistics on employment status, comprehensive analysis of job market and related issues).

The manpower issue in libraries is likely to determine the level of library and information services. Despite the importance of the quality of library services in determining a country's intellectual capacity, the data on the actual job market and situations of librarians is lacking. Therefore, a survey with librarians around Korea on their job market and conditions needs to be conducted.

The Library Policy Bureau of South Korea's Ministry of Culture, Sports and Tourism recognized the seriousness of the problem in supply and demand of librarians and conducted a joint survey, "Librarian Employment Survey" with the Korean Library Association in 2013 to address the issue in the newly established Library Development Master Plan.

Thus, the present study is conducted to determine the difference in the status of librarians' employment between 2013 and 2016, as well as the employment conditions, in order to determine the prospects of librarian supply and demand. Data on the impact of the status of human resources in the knowledge-based society of the 21st century and the growing importance of human resources is examined.

In addition, the study is conducted in order to make recommendations regarding librarian training and the educational system for a stable supply of human resources for the demand in response to social changes, and to determine the following: human resource targets in libraries and related industries; employment conditions; what the required competencies for librarians on the job are; what is required for employment; what policies need to be implemented; what the actual conditions of librarians on the job are.

## 2. Theoretical Background

### 2.1 Previous Studies

The research on librarians has been conducted on various aspects including the librarian certification system, job prospects in library and information science, college curriculum, employment of librarians, and strategies for improvement of librarian employment rate. Specifically, research on librarian's job prospects included studies on the employment status of college graduates with a library and information science major, and improvement recommendations, gathering opinions on librarian's

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job prospects, and overseas job prospects. Lee (2012) conducted an analysis of the employment status of the graduates of K university with a Library and Information Science major and proposed the following improvement measures: (1) change contract positions to tenure positions for improvement in the problem of low wages for librarians, (2) implement the measure of having one public library per 50,000 residents for librarians' career path expansion, and (3) remove contracted services for the operation of public libraries and BTL programs. In 2013, Noh et al. conducted a survey with students in the Department of Library and Information Science regarding their perception of librarian's job prospects. The study reported that the organizational factors that influence students' choice of workplace included compensation, benefits, self-development opportunities, working conditions and organizational culture, and the organization's growth potential individual factors were personal aptitude, knowledge and skill level in the field of employment, and social treatment and recognition, the fit with their major, and distance from work, in the listed order, respectively.

Additionally, research on strategies for the improvement of librarian's employment rate was conducted in the areas of increasing employment capability, human resource development in librarian training, and policy directions to improve librarian's employment rate. Cho, Choi, and Oh (2009) discussed components of strengths, individuation of strengths, and employment capability as the key components of increased employment capability, introducing the theory of personal strengths. The study argued that personal strengths are key resources of employment capability; the core competency in employment in the short term and career development in the long term; the essence of an individual's ability for problem solving. Further, they become strategic resources for knowledge-based society when librarians' recognize them proactively. The study defined the employment capability as an individual's ability to become employed by finding or creating an opportunity for work that utilizes one's demonstrated strengths. Career development and employment are accomplished with employment capability, which can be applied to all college students including future librarians, and they argued that since the process of increasing employment capability mostly involves converting an individual's internal information and external situational information into systematic information and knowledge, employment capability is expected to contribute and support the aspects of personal information management (PIM) and personal knowledge management (PKM).

Noh, Ahn, and Oh (2013) suggested that effective human resource development in librarian training requires the data on the current status of human resources in libraries and related industries, and the strategies in manpower demand and supply in relation to human resources training and utilization based on the survey results, and supportive legal measures. The study also conducted basic research for policymaking in enhancement of workforce (e.g., basic statistics on employment status, comprehensive analysis of job market and related issues). In addition the study analyzed the current status regarding policy environment including social environment, related systems and laws, and human resource training, and conducted a survey on demands for librarians in libraries in the analysis of needs in the field.

Ahn et al. (2014) proposed policy directions for the improvement of librarian's employment rate, and used the research methods that include literature review, statistical data, and results of survey with students and librarians. Regarding the target of policy improvement, the study set up four policy goals including two improvement measures in library training including the library certification

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system and the librarian training system, and two improvement measures in librarian employment including the Library Act and the library council service, proposing 15 specific strategies. Specifically, the proposed improvement measures on the Library Act included items on the support system for contract positions, titles of librarians and names of libraries, and establishment and enforcement of realistic criteria for librarian placement, as well as mandatory evaluation of all institution types; the proposed improvement measures on the relevant council activities included items on expansion of awards for librarians, building job information system for librarians, and developing and dissemination promotional materials for librarians.

## *2.2 Status of Librarian Training and Employment*

The present study conducts an analysis of the library environment and library manpower to investigate the demand for and employment of librarians. The study also conducted a survey to obtain basic statistics regarding newly certified librarians, and educational institutions for the training, and the employment rates of certified librarians.

### *2.2.1 Policy Directions Based on Analysis of Library Environment*

The current social environment surrounding libraries includes prolonged life expectancy, intensifying knowledge and information gap, and the increase in the need for complex cultural space. The library-related policy directions based on the social environment can be proposed as follows. First, the foundation for lifelong learning needs to be created for citizens' quality of life and increased competitiveness of the country in the context of the prolonged life expectancy. Second, since the knowledge and information gap hinders the integration and progress of society, service programs need to be developed and funded for reducing the gap in vulnerable groups. Third, significant efforts are made to create libraries as a hub of community activities as well as the knowledge and cultural space in the communities. Therefore, libraries need to develop and disseminate lifelong learning programs tailored to each phase of life, train professional workforce specialized for the task, develop and support various library services considering the characteristics and needs of the information poor, and increase the employment and capacities of the personnel in charge of library services specialized for the information poor. In addition, libraries must provide the complex cultural space to the users, and librarians need to be specialized in individual areas to provide the related services. The demand for the libraries specialized in individual subjects is also likely to increase.

### *2.2.2 Status of Library Personnel*

To determine the status of library personnel, a survey was conducted on the number of staff members of the libraries for each year, and the number of librarians with certificates for each institution type. The survey results are as follows. First, in the national library, the proportion of librarians increased, and the proportion of contract positions was lower than those of other institution types. In college libraries, the employment of tenured librarians appears to gradually decrease, which seems to be a result of the College Library Promotion Act. Second, the proportion of Class 2 Certified Librarians was the highest among different types of librarians in all institution types,

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and the proportion of Class 1 Certified Librarians was higher than that of Junior Librarians. The number of librarians did not change significantly across years. Therefore, the reason for the high proportion of contract positions needs to be investigated.

### *2.2.3 Status of Training Certified Librarians and Educational Institutions*

To determine the status of educational institutions for librarians, a survey was conducted on the status of the college programs in library and information science around Korea, and graduates of Korea Academy of Librarianship. The survey results are as follows. First, the number of certified librarians between 1966 and 2015 was 83,676 in total. The numbers of Class 1 Certified Librarians, Class 2 Certified Librarians, and Junior Librarians, were 2,312 (2.8%), 50,032 (59.8%), and 31,332 (37.4%). Second, regarding the status of undergraduate programs in library and information science, 35 4-year colleges currently offer undergraduate programs; 28 of them also offer master's programs and 16 of them offer doctoral programs, while five 2-year colleges offer programs in library and informational science. Third, the number of librarians who held certificates issued from the Korea Academy of Librarianship between 1965 and 2015 (excluding 2008) was 10,182 in total. Among them, the numbers of Class 1 Certified Librarians, Class 2 Certified Librarians, Junior Librarians, and librarian teachers were 76, 2,936, 5,971, and 700, respectively. Fourth, the number of all librarian certificates issued was 2,533 a year on average, and the certificates issued from institutions other than college programs and the Korea Academy of Librarianship between 2010 and 2015 accounted for 26.6% of them.

### *2.2.4 Status of Librarian Certificate Holders' Employment Rate*

Regarding librarian certificate holders' employment, a survey was conducted on the employment rate for programs in library and information science by year and by school. The survey results are as follows. First, regarding the employment status of the graduates in library and information science (2004-2014), 942 4-year college graduates looked for jobs annually on average, and 551 (58.5%) of them were employed; 433 2-year college graduates looked for jobs annually on average, and 313 (72.4%) of them were employed, showing a higher employment rate in 2-year college graduates than 4-year college graduates. Second, 4-year college graduates' employment rates were 64.0%, 58.4%, and 47.8% in 2013, 2014, and 2015, respectively, while 2-year college graduates' employment rates were 69.4%, 68.5%, and 60.0%, respectively. The numbers show the difference between 4-year and 2-year college graduates' employment rates of 5.4% in 2013, 10.1% in 2014, and 12.2% in 2015, while employment rates for both steadily decreased. Therefore, research needs to be conducted on the current status of the unemployed, and the reasons for unemployment among others to determine the cause of the decrease in employment rate, and present measures that address the problem.

### *2.2.5 Places of Employment for Graduates in Library and Information Science*

A survey was conducted on the places of employment for graduates in library and information science among the graduates of K University. The survey results are as follows. First, in 2014, the largest number of the graduates (N=4, 50.0%) found employment in fields other than their

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majors in the national libraries and related agencies. Among the institution types where they were hired, the proportions of school and college libraries were low. Second, in 2015, the largest number of the graduates (N=6, 27.3%) found employment in public libraries, followed by fields other than their majors (N=5, 22.7%), and national libraries (N=3, 13.6%). Since the employment in fields other than their majors ranked high for two years, it is important to determine the cause of the employment type.

### 3. Research Design and Methodology

#### 3.1 Research Design

To achieve the study objective, the present study included the following stages: examination of previous study findings, a survey of librarian training and employment, a survey of employment conditions and demands for librarians, and expert consultations.

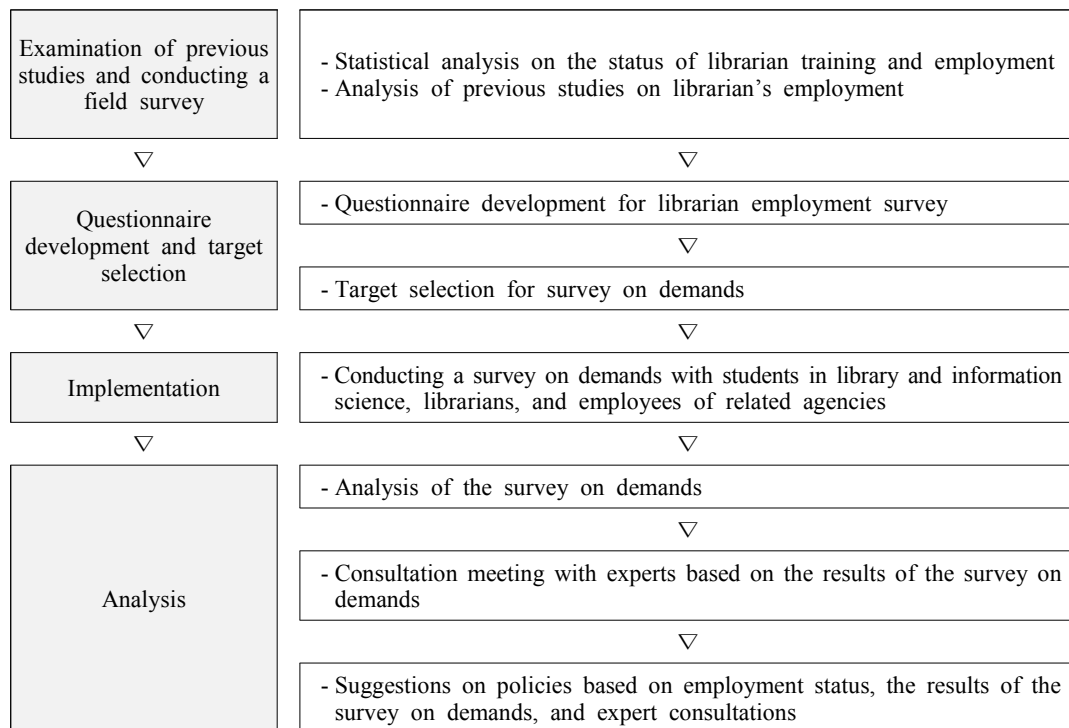


Fig. 1. Study procedure and details

#### 3.1.1 Literature Review

A review of previous studies on librarian employment was conducted. The comprehensive review included the studies on librarians' job prospects, employment conditions and the job market for

librarians in contract positions, and improvement measures for librarian's employment rate.

### 3.1.2 Comprehensive Analysis of Status of Training and Employment of Librarians

An investigation on the status of training and employment of librarians was conducted. First, the investigation of the status of librarian training was as follows. The publically available information from the Korea Academy of Librarianship was reviewed and information was obtained from the Korean Library Association to obtain information on the numbers of librarian certificate holders, the institutions for training and certification of librarians, training programs in library and information science, librarian certificate holders who graduated from the Korea Academy of Librarianship, and librarian certificates issued from institutions other than regular training programs. Second, the investigation of the employment rates of librarian certificate holders was conducted by reviewing the publically available information from Higher Education in Korea, and the Korean Educational Statistics Service of the Korea Education Development Institute on employment status of graduates in library and information science, and employment rates by department.

### 3.1.3 Survey and Analysis

In the present study, a survey on perception of librarian's employment rate was conducted with students, librarians, and employees in related agencies. Regarding student participants, they were recruited from the Department of Library and Information Science in 14 colleges including 12 4-year colleges and 2 2-year colleges. Regarding employee participants in libraries and related agencies, they were recruited from various types of libraries including the national libraries, college libraries, public libraries, school libraries, and specialty libraries; government-level institutions including the Korea Education Research Information Service (KERIS) and Korea Institute of Science and Technology Information (KISTI); and companies related to libraries including the library automation system company, the database building and content development company, and the machine-readable cataloging company. The survey was conducted for approximately one month from August 10 to September 14 in 2016 both online and offline.

Table 1. Numbers of Returned Survey on Demands of Students, Libraries, and Related Agencies

Student	Offline												Online
	College A	College B	College C	College D	College E	College F	College G	College H	College I	College J	College K	College L	
N	30	35	40	21	25	50	37	28	35	28	17	35	121
%	5.98	6.97	7.97	4.18	4.98	9.96	7.37	5.58	6.97	5.58	3.39	6.97	24.10
계	502												
Library and related agency	National library		Public library		College library		School library		Specialty library		Government-level institution and related agency		Total
	N	50	300	206	111	48	38	753					
%	6.64	39.84	27.36	14.74	6.37	5.05	100.0						

## 5. Results

### 5.1 Demographic Characteristics

#### 5.1.1 Students' Gender and School Year Distribution

The gender distribution of the students enrolled in the programs in library and information science who returned the survey were 142 male (28.3%) and 360 female (71.7%) out 502 students in total, showing a higher return rate for women than for men. This ratio is similar to gender distribution of students enrolled in library and information science. The school year distribution of the student respondents was 179 juniors (35.7%), 131 sophomores (26.1%), 109 freshmen (21.7%), and 83 seniors (16.5%). The number of juniors and seniors was 262 (52.2%), accounting for the majority.

Table 2. Students' Gender Distribution

Classification	Category	N	%
Gender	Male	142	28.3
	Female	360	71.7
	Total	502	100.0
School year	Freshmen	109	21.7
	Sophomore	131	26.1
	Junior	179	35.7
	Senior	83	16.5
	Total	502	100.0

#### 5.1.2 Gender and Age Distribution of Respondents from Libraries and Related Agencies

Regarding respondents' gender distribution, 614 women (81.5%), and 139 men (18.5%) returned the survey, showing a higher return rate for women than for men. Regarding the respondents working at the libraries, those in the tenured positions included 407 women (77.2%) and 120 men (22.8%); those on an indefinite contract included 66 women (94.3%) and 45 men (5.7%); those on a definite contract included 141 women (90.4%) and 15 men (9.6%). The interaction between the positions and gender was statistically significant at the 0.000 significance level.

The age distribution of the respondents included 199 (26.4%) aged 25-29, 134 (17.8%) aged 35-39, and 132 (17.5%) aged 30-34. Those in tenured position included only 13 (2.5%) aged 24 or younger, in contrast to 114 (21.6%) aged 35-39, 105 (19.9%) aged 25-29, and 87 (16.5%) aged 30-34. Those on indefinite contracts included 20 (28.6%) aged 30-34, 17 (24.3%) aged 25-29, and 10 (14.3%) aged 35-39; those on definite contracts included 77 (49.4%) aged 25-29, 36 (23.1%) aged 24 or younger, and 25 (16.0%) aged 30-34. The interaction between the positions and age was statistically significant at the 0.000 significance level.



Table 3. Librarians' Age Distribution

Classification	Category	Tenured position		Contract position (indefinite)		Contract position (definite)		Total		$\chi^2 / p$
		N	%	N	%	N	%	N	%	
Gender	Men	120	22.8	4	5.7	15	9.6	139	18.5	22.168 /.000***
	Women	407	77.2	66	94.3	141	90.4	614	81.5	
	Total	527	100	70	100	156	100	753	100	
Age	24 or younger	13	2.5	5	7.1	36	23.1	54	7.2	179.815 /.000***
	25-29	105	19.9	17	24.3	77	49.4	199	26.4	
	30-34	87	16.5	20	28.6	25	16.0	132	17.5	
	35~39	114	21.6	10	14.3	10	6.4	134	17.8	
	40~44	73	13.9	7	10.0	5	3.2	85	11.3	
	45~49	78	14.8	7	10.0	1	0.6	86	11.4	
	50~54	42	8.0	3	4.3	2	1.3	47	6.2	
	55~59	15	2.8	1	1.4	0	0.0	16	2.1	
	Total	527	100	70	100	156	100	753	100	

\*\*\*p<.001

### 5.2 Results of Group Comparison in Perception

Although the survey included 50 items on perception of students and librarians, this study focuses on the following items for group comparison in perception: the adequacy of college curriculum, additional courses required in the curriculum, employment requirements, efforts being made for employment, challenges in employment preparation, the degree of employment preparation, current employment region (librarian)/preferred region for employment (student), perception of job market for librarians, and librarian's future job prospects.

#### 5.2.1 Adequacy of College Curriculum

Students were asked if the college curriculum was adequate for employment in a desired job, and librarians were asked if the college curriculum was adequate for performance on the job. The results showed that 234 students (46.6%) and 60 students (12.0%) expressed that the curriculum was adequate and inadequate, respectively; 148 librarians (19.7%) and 212 (28.2%) expressed the curriculum was inadequate, respectively. This suggests that librarians had a more negative perception of college curriculum than students did.

Table 4. Difference between Students and Librarians in Perception of College Curriculum

Classification	Student		Librarian		Total		$\chi^2 / p$
	N	%	N	%	N	%	
Very inadequate	7	1.4	33	4.4	40	3.2	116.510/.000***
Inadequate	53	10.6	179	23.8	232	18.5	
Average	208	41.4	393	52.2	601	47.9	
Adequate	200	39.8	130	17.3	330	26.3	
Very Adequate	34	6.8	18	2.4	52	4.1	
M	3.40		2.90		3.09		
std	0.820		0.819		0.856		

\*\*\*p<.001, \*\*p<.01, \*p<.05

### 5.2.2 Additional Courses Required in College Curriculum

Regarding the results on additional courses required in the college curriculum, students indicated the following courses: electronic information organization and service (including digital and web information sources and archiving) (4.04), big data analytics and use (3.99), research program for librarians specialized in specific subjects (or practical training for librarians specialized in specific subjects) (3.95) among others. In contrast, librarians indicated the following courses: cultural programs (e.g., program planning in library cultural events) (4.20), library promotional marketing (4.10), and library user education (4.09). Moreover, students and librarians showed significant difference in perception on eight items (e.g., cultural programs, library promotional marketing, specialization in librarianship) of 12 items in total.

Table 5. Difference between Students and Librarians in Perception of Additional Courses Required in College Curriculum

Classification	Student		Librarian		Total		<i>t</i>	<i>p</i>
	M	std	M	std	M	std		
Cultural program (e.g., library cultural event, program planning)	3.86	0.79	4.20	0.74	4.07	0.78	-7.777	.000***
Services for the information poor (including the disabled and multicultural service)	3.85	0.76	3.84	0.75	3.84	0.75	.382	.702
Electronic information organization and service (including digital and web information sources and archiving)	4.04	0.74	4.08	0.80	4.07	0.78	-1.038	.300
Library promotional marketing	3.79	0.83	4.10	0.75	3.98	0.80	-6.711	.000**
Web 3.0/e-community	3.77	0.80	3.65	0.81	3.69	0.81	2.610	.009**
Library user education	3.77	0.86	4.09	0.78	3.96	0.83	-6.682	.000***
Specialization in librarianship	3.87	0.81	3.91	0.84	3.90	0.83	-.954	.340
Big data analytics and use	3.99	0.79	3.86	0.87	3.91	0.84	2.728	.006**
Library and information science and capstone design	3.55	0.82	3.34	0.82	3.42	0.83	4.616	.000***
Semantic web system building theory	3.62	0.79	3.31	0.89	3.44	0.87	6.389	.000***
Research program (or practical training) for librarians specialized in specific subjects or	3.95	0.82	3.93	0.90	3.94	0.87	.229	.819
Other	2.92	0.78	2.48	1.30	2.66	1.14	7.376	.000***

\*\*\*p<.001, \*\*p<.01, \*p<.05

### 5.2.3 Employment Requirements

Regarding the results on the employment requirements in librarianship, students indicated the following as requirements: internships and practicums (4.10), career management (3.76), language skills and various certifications (3.75 for both), and academic performance (3.61). Librarians indicated the following as requirements: various certifications (3.94), internships and practicums (3.86), academic

performance (3.72), and language skills (3.63). Moreover, students and librarians showed significant difference in perception on seven items (e.g., certifications, internship and practicum, career management) of nine items in total.

Table 6. Difference between Students and Librarians in Perception of Employment Requirements

Employment Requirement	Student		Librarian		Total		<i>t</i>	<i>p</i>
	M	std	M	std	M	std		
Academic performance	3.61	0.80	3.72	0.83	3.68	0.80	-2.342	.019*
Language skills	3.75	0.80	3.63	0.82	3.68	0.80	2.403	.016*
Various certifications	3.75	0.82	3.94	0.79	3.87	0.82	-4.182	.000***
Internship and practicum	4.10	0.74	3.86	0.84	3.95	0.74	5.153	.000***
Career management	3.76	0.84	3.11	0.89	3.37	0.84	12.907	.000***
Volunteer activities (social contribution)	3.30	0.92	1.93	0.96	2.48	0.92	25.237	.000***
Religion	1.84	1.08	1.81	0.95	1.82	1.08	.644	.520
No particular requirement	2.13	1.06	2.08	1.21	2.10	1.06	.728	.467
Other	2.75	0.83	3.48	0.80	3.19	0.83	-15.496	.000***

\*\*\**p*<.001, \*\**p*<.01, \**p*<.05

#### 5.2.4 Efforts Being Made for Employment

Regarding the results on the efforts being made for employment in the desired field, students indicated the following: acquisition of various certifications (3.24), improving language skills (3.21), and volunteering (social contribution) (3.04). Librarians indicated the following: acquisition of various certifications (3.72), preparation for job interviews (3.60), and career management (3.47). Students and librarians showed significant difference on all items except religion.

Table 7. Difference between Students and Librarians in Perception of Efforts for Employment

Classification	Student		Librarian		Total		<i>t</i>	<i>p</i>
	M	std	M	std	M	std		
Improving language skills	3.21	0.91	3.45	0.89	3.35	0.91	-4.571	.000***
Acquisition of various certifications	3.24	0.97	3.72	0.90	3.53	0.96	-9.072	.000***
Internship	2.75	1.10	3.06	1.06	2.94	1.08	-4.913	.000***
Career management	2.82	1.05	3.47	1.06	3.21	1.10	-10.621	.000***
Preparation for job interview	2.67	0.95	3.60	0.96	3.23	1.06	-16.983	.000***
Volunteer activities (social contribution)	3.04	1.09	2.75	0.98	2.87	1.04	5.027	.000***
Religion	1.92	1.10	1.91	1.01	1.91	1.04	.276	.783
No particular preparation	2.74	1.01	2.21	1.13	2.42	1.12	8.401	.000***
Other	2.72	0.79	2.05	1.17	2.32	1.08	11.179	.000***

\*\*\**p*<.001, \*\**p*<.01, \**p*<.05

### 5.2.5 Challenges in Employment Preparation

Regarding the results on the challenges in employment preparation, students indicated the following: lack of job information (3.32), difficulty deciding on a desired workplace (3.22), and lack of time (2.83). Librarians indicated the following: lack of job information (3.70), difficulty deciding on a desired workplace (3.10), and responsibility to secure living expenses (3.02). For both students and librarians, lack of job information was ranked highest as the challenge in employment preparation. Students and librarians showed significant difference on four items including lack of job information, being occupied by the responsibility to secure living expenses, and lack of time.

Table 8. Difference between Students and Librarians in Perception of Challenge in Employment Preparation

Classification	Student		Librarian		Total		<i>t</i>	<i>p</i>
	M	std	M	std	M	std		
Lack of job information	3.32	0.92	3.70	0.93	3.55	0.95	-7.057	.000***
Unfit for aptitude	2.57	1.03	2.52	0.98	2.54	1.00	.852	.394
Plan for further education	2.30	0.97	2.34	0.91	2.32	0.93	-.740	.459
Responsibility to secure living expenses	2.59	1.10	3.02	1.14	2.85	1.14	-6.711	.000***
Difficulty deciding on a desired workplace	3.22	1.06	3.10	1.08	3.15	1.07	1.930	.054
Lack of time	2.83	0.98	2.69	1.04	2.75	1.02	2.383	.017*
Other	2.81	0.83	2.11	1.20	2.39	1.12	11.307	.000***

\*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$

### 5.2.6 Degree of Employment Preparation

Regarding the results on the degree of employment preparation, 285 students (56.8%) indicated it insufficient, and 31 students (6.2%) indicated it sufficient, while 237 librarians (31.5%) indicated it insufficient, and 210 librarians (27.8%) indicated it sufficient. Between the two groups, students perceived the degree of preparation more insufficient, and the difference was statistically significant.

Table 9. Difference between Students and Librarians in Perception of Degree of Employment Preparation

Classification	Student		Librarian		Total		$\chi^2 / p$
	N	%	N	%	N	%	
Very insufficient	59	11.8	42	5.6	101	8.0	122.115/.000***
Insufficient	226	45.0	195	25.9	421	33.5	
Average	186	37.1	306	40.6	492	39.2	
Sufficient	26	5.2	170	22.6	196	15.6	
Very sufficient	5	1.0	40	5.3	45	3.6	
M	2.39		2.96		2.73		
std	0.797		0.959		0.941		

\*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$

### 5.2.7 Librarian's Current Employment Region and Student's Preferred Region for Employment

Students were asked about their preferred region for employment and librarians were asked about their current employment region. The survey results showed that students' preferred regions for employment included Seoul Metropolitan City (N=192, 38.2%), Gyeonggi-do (N=77, 15.3%), and Busan Metropolitan City (N=70, 13.9%). Librarians' current employment regions included Seoul Metropolitan City (N=162, 21.5%), Gyeonggi-do (N=129, 17.1%), and Busan Metropolitan City (N=62, 8.2%). In both students' preferred regions and librarian's current regions, the listed three regions ranked highest, and Seoul Metropolitan City showed the overwhelming preference or reality. The difference between the two groups in perception overall, however, was statistically significant.

Table 10. Librarian's Current Employment Region and Student's Preferred Region for Employment

Classification	Student		Library		Total		$\chi^2 / p$
	N	%	N	%	N	%	
Seoul Metropolitan City	192	38.2	162	21.5	354	28.2	157/.000**
Busan Metropolitan City	70	13.9	62	8.2	132	10.5	
Daegu Metropolitan City	37	7.4	35	4.6	72	5.7	
Incheon Metropolitan City	20	4.0	35	4.6	55	4.4	
Daejeon Metropolitan City	10	2.0	13	1.7	23	1.8	
Gwangju Metropolitan City	29	5.8	19	2.5	48	3.8	
Ulsan Metropolitan City	7	1.4	11	1.5	18	1.4	
Sejong Special Self-governing City	2	0.4	28	3.7	30	2.4	
Gyeonggi-do	77	15.3	129	17.1	206	16.4	
Gangwon-do	2	0.4	28	3.7	30	2.4	
Chung-cheong bukdo	17	3.4	19	2.5	36	2.9	
Chungcheongnam-do	5	1.0	46	6.1	51	4.1	
Jeollabuk-do	3	0.6	31	4.1	34	2.7	
Jeollanam-do	2	0.4	16	2.1	18	1.4	
Gyeongsangbuk-do	15	3.0	46	6.1	61	4.9	
Gyeongsangnam-do	8	1.6	70	9.3	78	6.2	
Jeju Special Self-governing Province	6	1.2	3	0.4	9	0.7	

\*\*\*p<.001, \*\*p<.01, \*p<.05

### 5.2.8 Perception of Librarian's Job Availability

Regarding the results on perception of the job market, students' responses are as follows: there are few tenured positions by 67 students (61.5%), there is a steady supply of contract positions by 20 students (18.3%), and there are even few contract positions by 15 students (13.8%). Librarians' responses are as follows: there are few tenured positions by 60 librarians (45.8%), there are even few contract positions by 34 librarians (26.0%), and there is a steady supply of contract positions by 25 librarians (19.1%). Difference between two groups in perception was statistically significant.

Table 11. Difference between Students and Librarians in Perception of Job Availability

Classification	Student		Librarian		Total		$\chi^2 / p$
	N	%	N	%	N	%	
There are many tenured positions	2	1.8	2	1.5	6	1.2	294.367 /.000**
There are few tenured positions	67	61.5	60	45.8	249	49.6	
There are many contract positions	5	4.6	10	7.6	42	8.4	
There is a steady supply of contract positions	20	18.3	25	19.1	101	20.1	
There are even few contract positions	15	13.8	34	26	104	20.7	

\*\*\*p<.001, \*\*p<.01, \*p<.05

### 5.2.9 Librarian's Future Job Prospects

Regarding the results on perception of librarian's future job prospects, students' responses are as follows: decreased prospects and average scored the same with 152 (30.3%), some potential for growth with 117 (23.3%), and I do not know with 73 (14.5%). Librarians' responses are as follows: decreased prospects with 379 (50.3%), average with 213 (28.3%), and some potential for growth with 107 (14.2%). It was found that librarians on the job had a more negative perception of job prospects than students did.

Table 12. Difference between Students and Librarians in Perception of Librarian's Future Job Prospects

Classification	Student		Librarian		Total		$\chi^2 / p$
	N	%	N	%	N	%	
Do not know	73	14.5	46	6.1	119	9.5	66.259/.000**
Decreased prospects	152	30.3	379	50.3	531	42.3	
Average	152	30.3	213	28.3	365	29.1	
Some potential for growth	117	23.3	107	14.2	224	17.8	
Large potential for growth	8	1.6	8	1.1	16	1.3	

\*\*\*p<.001, \*\*p<.01, \*p<.05

### 5.2.10 Conclusions and Implications of Comparison of Students and Librarians on the Perception of Job Prospects

Comparison of librarians and students in their perception was conducted using nine items. Specifically, the items were the adequacy of college curriculum, additional courses required in the curriculum, employment requirements, efforts being made for employment, challenges in employment preparation, the degree of employment preparation, current employment regions (librarian)/preferred regions for employment (student), perception of job market for librarians, and librarian's future job prospects.

First, regarding the adequacy of college curriculum, students rated it relatively high, whereas librarians on the job did not. In particular, students indicated the need for courses such as electronic information organization and service, and big data analytics, while librarians indicated that curriculum with components such as cultural programming and library promotional marketing are necessary. This suggests

that librarians prefer curriculum that enhances the competencies required on the job; thus, the curriculum needs to be organized incorporating this finding to be relevant to librarians on the job.

Second, regarding the employment requirements for students and graduates in library and information science, students placed importance on internships and practicums, career management, language skills, various certifications, and academic performance, while librarians placed importance on various certifications, internships and practicums, academic performance, and language skills, in the listed orders.

Third, regarding challenges in employment preparation, for both students and librarians, lack of job information ranked at the top, followed by difficulty deciding on a desired workplace. Both groups also showed a negative perception of the current job market and future job prospects for librarians.

In summary, both groups placed importance on acquiring various certifications for employment, and listed the lack of job information as the challenge, suggesting the importance of providing those preparing for employment with courses and programs on certifications, and job information. It is likely necessary to provide methods for easy access to job information through database on job information sites.

### *5.3 Expert Opinions on Results of Survey and Investigation on Current Status*

The study included the process of incorporating experts' opinions on results of surveys and investigation on the current status of the field. A researcher and an expert in libraries, who had experience of conducting policy research and investigations on current status, were recruited. The summary of the experts' opinions are as follows.

Table 13. Experts' Opinions on results of survey and investigation on current status

Classification	Details
Problem in employment preparation	Students are often quite unaware of the work on the job, have fragmented knowledge regarding job information, and study material that is irrelevant to employment.
Relationship between preferred salary and self-esteem	The survey result of low range of preferred salaries of librarians and students seems to suggest that they had little pride in their jobs.
Preference for reading room work	The reason for the reading room work being ranked highest among librarian's work is because not only do librarians actually do a lot of reading room work but they also do other work such as procurement and sorting on top of reading room work.
Satisfaction with curriculum	The reason for low satisfaction with college curriculum is because the current curriculum is insufficient for acquiring practical experience and knowledge actually needed for employment.

A summary of the discussion in the consultation meeting with experts is as follows.

### *5.3.1 Problems Student Training and Employment Preparation*

Experts' opinions included that students are often quite unaware of the librarians' duties on the job, have fragmented knowledge regarding job information, and study is often irrelevant to employment. Therefore, an ongoing provision of professional training including internship programs and certification required on the job is needed.

In recent years, students have made significant efforts to gain understanding of work on the job using on-the-job training and internships, and educational curriculum is changing extensively in accordance with the policy of the Ministry of Education; therefore, the problems pointed out by the experts are likely to be gradually resolved.

### *5.3.2 Preferred Salary and Self-Esteem*

Experts' opinions concluded that the survey result of low range of preferred salaries of librarians and students seems to suggest that they had little pride in their jobs. The survey results showed the preferred salary range of both students and librarians was between 20-25 million KRW, which is lower than those of other fields (i.e., 30 million KRW or higher). Therefore, librarians' salaries need to be raised.

Regarding the opinion about self-esteem regarding the job, it can be interpreted two ways: students and librarians may actually have little pride, or the survey result reflects the reality of the salary range including the range offered on job announcements. Therefore, policymakers and the library community need to explore measures for implementing adequate salary offers that fit the amount of work.

### *5.3.3 Reason for High Ranking of Preference for Reading Room Work*

According to experts, the reason for the reading room work being ranked highest among librarian's work is because not only do librarians actually do a lot of reading room work, but they also do other work such as procurement and sorting on top of reading room work. Moreover, the proportion of user services is bound to increase because procurement and sorting work is often outsourced.

### *5.3.4 Librarians' Satisfaction with Educational Curriculum*

The survey results showed a low level of satisfaction with curriculum with regard to employment preparation. Experts offered the opinion that the reason for low satisfaction is because the current curriculum is insufficient for acquiring practical experience and knowledge actually needed for employment. Experts also opined that the current curriculum has large gaps between it and the work on the job, and provides little regarding competence in responsibilities required to perform on the job when newly employed librarians are hired, especially in the current job market where most positions are on a contract basis. The issue of educational curriculum may be addressed by first conducting a survey on librarian's needs regarding curriculum with graduates currently working as librarians, and providing opportunities for students and graduates to meet and discuss the job knowhow after employment.

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## 6. Discussion on Improvement of Librarian's Employment Rate

The present study was conducted to determine the status of librarians' employment and provide basic research data for gauging manpower supply and demand in the libraries based on the status of human resources in the knowledge-based society. Under the objective, the study included literature review, investigation of the status of librarian training and employment, and a survey on librarians' needs and employment conditions. Based on the findings of the study, the following improvement measures are proposed.

### 6.1 *Setting up Employment Information System*

The survey results on the needs of students, librarians, and employees in related agencies showed that one of the greatest challenges students and librarians face is the lack of job information. Currently, the only available place for comprehensive information related to librarian jobs is Librarian e-village (<http://cafe.naver.com/lisleader>), which provides job information separately for tenured, contract, part-time, and related positions. Otherwise, job information is provided by individuals having to check each job announcement site. Moreover, many of the job announcements lack the details on the positions offered and responsibilities, providing insufficient information to job seekers.

To address this issue, a comprehensive job information system needs to be set up to provide the information, and the system needs to have the structure that requires the job announcements to include the information that helps job seekers to understand the responsibilities of the jobs they apply for (e.g., hiring field, application procedure, job responsibilities, salary, required competencies, work environment, qualifications, eligibility, work hours). In addition, since job seekers perceive it important to acquire various certifications for employment it is likely to facilitate job seekers' employment to provide information on acquiring certificates, and job information courses and programs.

The job information system will likely increase the employment rate through easing the job search and recruitment processes with a concentration of the job-related information. Moreover, the long-term use of the system will likely facilitate the understanding of the change in the types of librarians, and diversity of fields of employment.

To increase the operational efficiency and utilization of the job information system, most job information must be gathered through cooperation with various institutions as well as efforts of the personnel in charge. In addition, it will likely require personnel dedicated to ongoing real-time updates of job information.

### 6.2 *Reorganization of Educational Curriculum*

Based on the survey results on the content that needs to be added to college curriculum, students indicated the following: electronic information organization and services (including digital and web information sources and archiving) (4.04), big data analytics and use (3.99), research programs for librarians specialized in specific subjects (or practical training for librarians specialized in specific subjects) (3.95). Librarians indicated the following: content on cultural programs (4.20), library

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promotional marketing (4.10), and library user education (4.09). The courses that were ranked high by both were practicums and courses on practical skills (e.g., administration, career, handling complains, computer skills).

The results showed difference between the two groups in their needs for educational curriculum. The results suggest that students prefer curriculum that reflects some of the advanced technologies, like content on the application of technologies they want in their jobs in the future, and that provides education to prepare them to be recognized as professionals. In contrast, librarians preferred curriculum that reflects the skills to respond to users' needs required on the job, and that includes the content on the actually offered services.

In the environment in which the needs on the job are constantly changing and the information technology, and science and technology continue to advance, while users' needs are getting advanced, it is a challenge to determine what kind of curriculum would be ideal. Training in the skills that are currently necessary in a practical sense would equip the students to adjust well on the job; however, to have a vision and quality for advancing libraries with future-orientation, academic curriculum must be more advancement-oriented and take the lead in terms of service content.

In conclusion, the educational curriculum in library and information science needs to proceed with future-orientation while accommodating the needs of the field. The curriculum must be developed and enhanced to enable students to have competencies required for designing and advancing libraries as well as the immediate responsibilities on the job upon graduating.

### *6.3 Ongoing Surveys on Employment Conditions*

The present study was conducted in the same context as the survey on employment conditions conducted in 2013, as a comparative analysis of 2013 and 2016 in perceptions of students and librarians. The findings of this study are expected to inform the prediction of job prospects and making job support policies. Moreover, it will be extremely meaningful to analyze the changes in perception of employment in 10 or 20 year periods using ongoing surveys on employment conditions. It is suggested that the surveyors should be replaced every two years, and policy recommendations must be based on the investigator-centered survey focusing on libraries on the job.

The survey allows precise understanding of the status and flow of manpower demand and supply in the Department of Library and Information Science. Since the education in library and information science is primarily aimed at training librarians, the understanding of the status of human resources in libraries and related industries is crucial. Moreover, to build strategies on the training and utilization of human resource estimated for the future, and prepare legal measures necessary for them based on the precise understanding of the current status, ongoing surveys on employment status and conditions need to be conducted. The ongoing surveys and reports require cooperation and support in personnel and budget, such as closely working together with the Ministry of Education, Ministry of Interior, and Ministry of Labor.

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#### *6.4 Determination of Ideal Qualities of Librarians*

In a knowledge-based society, knowledge services an important role in individual success and as a driving force in the society and the country. Consequently, the ability to produce the knowledge and efficiently handle it drew attention as a core competency. To fulfil the role of training creative professionals with capabilities of creating knowledge and value, college education need to change from a curriculum of liberal education to a curriculum for competencies required by the society. Accordingly, universities now aim at setting educational goals based on capabilities to realize the ability-based education, and providing the curriculum that fits it to train human resources that fit the ideal qualities of individual universities. However, while qualifications and expertise of librarians has been studied, the ideal qualities and core competencies that demonstrate librarians' expertise and competencies have not been studied. To determine the ideal qualities of librarian, it is expected that consensus needs to be reached among the educational institutions that train librarians, requirements expressed by the employees on the jobs, and the society's needs with regard to librarian's work. Although the qualities are likely expected to change according to the social, economic, and cultural changes, and vary across various stakeholders, it is an essential process to solidify the expertise of librarians and determine their ideal qualities. Once the qualities are determined through the process, the strategies to train the human resources in preparation for the changes in social, economic, and cultural environment need to be planned and established.

#### *6.5 Implementation of NCS-based Curriculum*

The National Research Foundation of Korea (NRF) published the guidelines for NCS-based educational curriculum, which included one for library and information science. However, since the curriculum for library and information science is primarily organized around competencies that can be trained in 2-year colleges, it is difficult to implement it in 4-year colleges. Thus, since NCS is the standards applied regardless of type of institution type, it needs to be revised in the case of the NCS-based curriculum for library and information science.

In addition, the NCS-curriculum needs to be developed toward the direction in which ideal qualities and core competencies of librarians are realized. Therefore, educational institutions likely need to develop a curriculum for the library and information science community and the library community, but need to modify it to incorporate the characteristics of individual colleges and goals of individual departments.

#### *6.6 Presentation of Specific Work Conditions at the Time of Employment*

Employees need to present specific work conditions and responsibilities at the time of employment. The survey results showed that work condition was rated highest among the organizational and environmental factors in workplaces that affect choice of workplace. This suggests that job seekers have the strongest need for the information on work conditions.

Currently, job announcements usually include information on the number of openings, application

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procedure, required qualifications, application schedule, application submission, and application materials, but not the details on job responsibilities. Because of this lack of information, job seekers are uninformed of the skills and competencies required for the jobs they apply for, and often experience the lack of fit between their jobs and aptitude when they become employed and therefore choose to leave the jobs.

Job announcements need to present the information on the department, position, and job responsibilities clearly. This will allow applicants to be informed of the work they will do when they are employed in the agency or company, and improve their abilities through systematic preparation for employment.

## 7. Conclusions

The present study aimed at determining the employment status for librarians using a survey on needs, and the prospects of manpower demands and supply in libraries based on the status of human resources in the 21st century knowledge-based society with the growing importance of human resources. This will help to identify areas of improvement needed such as librarian training and an improved educational system to stabilize the demand and supply of human resources in a proper manner according to social changes. Several discussion points and recommendation generated from the study are as follows.

First, since the primary purpose of the training in library and information science is to train librarians, it is essential to determine the status of human resources in libraries and related industries. Moreover, ongoing surveys of employment status need to be conducted to establish strategies to facilitate the supply and demand relationship in human resources estimated to be needed in future, and put necessary legal measures in place. The surveys should provide the understanding on the reasons for the unemployment, the reasons for the high discrepancy between graduate's major and job requirements, and the reason for the decreasing employment rate. In addition, for the strategies and prospects to be realized, a consensus needs to be built among the Library Policy Committee, college faculties in library and information science, librarians on the job, and professional organizations, based on discussions and hearings. Moreover, cooperation from the Ministry of Education, Ministry of Interior, Ministry of Labor, as well as the Ministry of Culture, Sports, and Tourism needs to be obtained.

Second, a need for improvement in librarians' work environment was found. The results on distribution of positions by workplace showed that 84.6% of those employed in contract positions worked for a 1-2 year period, suggesting the instability of the employment of librarians on contract, and that contract-based employment is becoming a permanent fixture in the field. The areas of improvement necessary included low wages, job insecurity, difficulties deriving from placement of employees with unfit majors, conflict with superiors, pride as a librarian, excessive workload, and poor environment; improvement needs to be made in the areas of future library budget support at the national level, benefits, and a shift toward tenured positions.

Third, libraries need to develop and provide life-long education programs tailored to individual

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life stages. Due to increased life expectancy, libraries play a role of preparing the foundation for life-long learning; therefore, it is necessary to train the professional workforce to be in charge of the work, and develop and support various library services considering characteristics and needs of the information poor, and enhance the competencies of the personnel in charge of specialized library services for specific types of the information poor.

Fourth, libraries need to serve as a complex cultural space for users, and librarians need to be specialized in specific services related to cultural programming, as the demand for libraries specialized in specific subjects are likely to increase. This is due to the fact that the efforts to use libraries as the hub of the community activities are growing, and that in fact, many libraries are changing extensively to serve as complex cultural space.

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