
An Analysis of User Satisfaction of K University's Library Service

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ABSTRACT

This study purposed to discover whether or not academic libraries reflect these changing roles. We selected K University as the research target and surveyed user satisfaction of materials, staff services, facilities, electronic devices, media, and so on.

The research findings are as follows: 1) the frequency of library visits of University K was on the high side, 2) the primary purpose of using the academic library was associated with learning or reading, therefore, the most used library spaces were related to that, 3) the most used library materials were 'general books', the most unused were 'reference books', 4) the most preferred way to obtain needed materials when failing to find wanted materials was 'Contact librarian'. A similar phenomenon occurred in terms of facility use, 5) university K's users were usually satisfied with the loan policy, 6) the rate of users who don't know whether there is user education was very high, the rate of users who have no experience with user education was extremely low. These research findings can be referenced by library management to improve libraries' service quality and take advantage of complex spatial configurations.

1. Introduction

University libraries and college education are closely linked. The information society increases the competitive power of the university and the academic library, which strengthens national competitive power. So the academic library must be operated developmentally for both academic and national competitiveness. To support professors and students in their research and learning activities, appropriate facilities and systems must be equipped with features, and the role of university libraries will be properly fulfilled.

Libraries are one of the central organizations to support the functions of the university. Academic libraries provide information resources that their members need. The role of providing information resources will have a huge impact on the development of universities' education and scientific research

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(Noh, 2011).

Academic libraries collect, organize and archive their members' needed information resources, and try to provide them effectively. Recently, due to advancing computer systems and high-speed networks, academic libraries have been required to change their system operations (Back, 2001). They are transforming into complex spaces for communication, relaxation, and information commons to reflect their increased users' needs.

Korean academic libraries introduced an online search system since the 20th century. After that, they were equipped with library automation systems for the convenience of librarians and patrons. Since then, they have been continually strived to reflect environmental changes to their libraries and meet users' needs in terms of building, remodeling, information resources, facilities, and services.

This study purposed to discover whether or not academic libraries are actually reflecting these changing roles, selected K University as the research target and surveyed user satisfaction there.

2. Related studies

There is much research about university libraries, some especially focused on user satisfaction. In this section, we analyzed the studies related to user satisfaction in academic libraries. Back (2001) studied the operating plan for a customer-oriented library, and reported that areas with the highest satisfaction were the promptness of circulation, followed by processing fines, the library's location. The areas of lowest satisfaction were users' complaint processing speed and marketing method. Based on his study, he recommended that the library could improve the user satisfaction by raising the likelihood of finding their needed materials on the shelves and securing learning facilities. He also suggested that continuing interest in better information services is needed because user satisfaction may vary depending on situational factors.

You (2005) purposed to identify user satisfaction for an academic library in order to investigate problems in academic library management and to create library development strategies. This study also includes relative functions between academic education and academic libraries. The research method for this study is a survey for undergraduate students in K University. Results of the survey can be regarded as users' needs, and can be used for fundamental data and an assessment measure in order to develop an academic library operation plan.

Nam, Moon, and Yi (2009) studied user satisfaction in spatial composition before and after the remodeling of a university library, focusing on C university library. In this study, they analyzed changes in the configuration of space, and surveyed for user satisfaction before and after the remodel. Then the results were analyzed based on C University Library. As a result of this study, the library remodel was utilized to determine the importance of library space in the future; these results increase the quality of library service or library user satisfactions.

Nam and Choi (2011) focused on user satisfaction with e-Book services in university libraries. This research surveyed college students in Korea on their satisfaction with e-book services provided by university libraries. Their usage behavior was investigated, and the satisfaction rate for e-book usage and its service quality were analyzed to determine the status of e-book usage. The analysis

showed that overall satisfaction for e-book service of university libraries was 2.93% on average. Moreover, the more frequently a student used the service, the more satisfied the student was: junior/senior-level and graduate school student groups showed higher satisfaction for e-book service than freshman and sophomore students. The most influential factor for satisfaction based on the e-book service quality was the content of the service, followed by the library support service system. Based on the findings, reinforcement of library public relations and user education, and maintenance of the variety and up-to-date status of the contents were proposed to stimulate future university library e-book services.

Kim (2008) studied the user satisfaction and loyalty of university library users. The research purpose for this paper is an adopted version of the European Customer Satisfaction Index (ECSI) in a survey performed on library users to measure user satisfaction and loyalty factors. A questionnaire was designed to integrate measurement into the library's management system for visual analysis of what users expect from the library. Results from the survey showed that users expect more improvement in the library environment and collection of printed publications. Concluding from the survey, Kim made the following suggestions to satisfy user expectations: 1) improve library environment, 2) increase collections of printed publications and periodical to meet readers' demands, 3) offer more friendly and helpful user service.

The above studies mainly evaluated the general and common factors including collection, buildings, space, and so on. But modern academic libraries are improving to 'Information Commons' space, a complex space accompanying the community and the rest, and a space providing e-services. Therefore, studies surveying all activities and all library components rather than user satisfaction with the materials should be conducted. This study surveyed and investigated the complex factors including facilities, services, environment, and so on, and user satisfaction of them overall.

3. Research design and methodology

3.1. Data collection

To perform this study, the researchers targeted undergraduates of university K, distributing 800 questionnaires, which is equivalent to 10 percent of all students of university K, who can be users of central library. We directly distributed the questionnaire and surveyed the extracted sample respondents. The questionnaire cover letter included the purpose of the research and survey, and also a simple statement informing them that they are the extracted samples. Afterwards, respondents had an understanding of the survey through the cover letter, and then participated in the survey voluntarily. As a result, the number of collected questionnaires from the total distributed 800 was 184, the response rate was 23%. The survey period was from May 1 through 30, 2011.

Answered and returned questionnaires were coded for each question. The primary coded data was contrasted with the original questionnaires for accuracy once again. Through a review process, primary coded data and secondary reviewed data were completed. For statistical analysis, statistical package SPSS (PASW Statistics 18) was used. For each question of the survey, frequency analysis and descriptive statistics were calculated.

3.2. Configuration of survey questions

The survey questions are composed of 5 sections and 21 questions. The 5 sections are about respondents' demographic information, users' library using patterns, user satisfaction, the libraries' functionality, user training, and other comments. Contents and configuration of the questionnaire are as follows in Table 1.

Table 1. Items and configuration of the questionnaire

Survey area	Detailed survey area	Surveyed contents	Question Number
Library Usage	Library usage	Library using frequency	4
		The main purpose for using the library	5
		The materials commonly used in the library	6
	Troubleshooting	The space most used in the library	7
		How to troubleshoot from the library materials	8
		How to troubleshoot from the library facilities	9
Library using satisfaction and the needs of user training	User satisfaction and requirements	Loan Period	10
		The number of loaned books	11
		Library Services	12
		Timeliness of library materials	13
		Variety of library materials	14
		Library Facilities and Environments	15
	needs of user training	Requirements for new space	16
		Aware of the presence of user education	17
		Whether or not educational experience	18
		Number of trainings received	19
		Satisfaction with user training	20
Demographic information	Gender	Needs for user training in the library	21
		Year	2
		School of Study	3

4. Results

4.1. Demographic Information

In this part, we presented the gender, year, and school of study of K university library's users. The following Table 3 is about year by gender. Comparing the gender of respondents, the number of male respondents was 72 to 112 female respondents, meaning female respondents were higher than men by approximately 20%. The distribution of year ranges from 17.4% (Year 2) to 33.7% (Year 4); it can be said the number of respondents by year are distributed evenly.

Table 2. Year by Gender

			Year in University				All
			Year 1	Year 2	Year 3	Year 4	
Gender	Male	freq.	17	16	18	21	72
		%	9.2%	8.7%	9.8%	11.4%	39.1%
	Female	freq.	27	16	28	41	112
		%	14.7%	8.7%	15.2%	22.3%	60.9%
All		freq.	44	32	46	62	184
		%	23.9%	17.4%	25.0%	33.7%	100.0%

The following Table 3 shows the distribution of respondents by colleges. K University's six colleges were surveyed for this study. When comparing the number of respondents by colleges, College of Humanities was the highest with 39.7%, and College of Global Studies was the lowest with 6.5%. When separated by gender, female respondents in college of Humanities were examined most with 51 respondents (27.7%).

Table 3. College by Gender

			College					All	
			Humanities	Social Sciences	Natural Sciences	Art & Design	Biomedical & Health Science	College of Global Studies	
Gender	Male	freq.	22	20	16	1	8	5	72
		%	12.0%	10.9%	8.7%	.5%	4.3%	2.7%	39.1%
	Female	freq.	51	17	12	13	12	7	112
		%	27.7%	9.2%	6.5%	7.1%	6.5%	3.8%	60.9%
All		freq.	73	37	28	14	20	12	184
		%	39.7%	20.1%	15.2%	7.6%	10.9%	6.5%	100.0%

The following Table 4 is the correlation table between Year and Colleges. The college and year showing the highest response rate were 4th Year in college of Humanities, followed by the 3rd Year in the same college. College of Art & Design showed the lowest response rate.

Table 4. Correlation table of years and college

Response		Colleges						All	
		Humanities	Social Sciences	Natural Sciences	Art & Design	Biomedical & Health Science	Global Studies		
Year	Year 1	freq.	3	10	7	8	8	8	44
		%	1.6%	5.4%	3.8%	4.3%	4.3%	4.3%	23.9%
	Year 2	No	19	4	2	0	5	2	32
		%	10.3%	2.2%	1.1%	.0%	2.7%	1.1%	17.4%
	Year 3	freq.	21	7	11	3	3	1	46
		%	11.4%	3.8%	6.0%	1.6%	1.6%	.5%	25.0%
	Year 4	freq.	30	16	8	3	4	1	62
		%	16.3%	8.7%	4.3%	1.6%	2.2%	.5%	33.7%
All		freq.	73	37	28	14	20	12	184
		%	39.7%	20.1%	15.2%	7.6%	10.9%	6.5%	100.0%

4.2. Frequency of library visit

The following Table 5 is about the frequency which K University users visit and use the central library. The question asking about their library visit frequency was composed of 5 possible responses: 1-3 times a week, 4 or more times a week, 1-3 times a month, 1-3 times in one semester, and never use. The ‘never use’ response was zero, so four responses were analyzed.

In analysis of ‘frequency of library visits’, ‘1-3 times a week’ is the most frequently chosen, ‘1-3 times in one semester’ was the least. Overall, it can be said that the frequency of library visits were on the high side.

When analyzing ‘frequency of library visit’ by gender, the number of respondents answering that they use the library in ‘1-3 times a week’, was the highest with 50.5% (93 respondents). It was followed by ‘more than 4 times a week’ with 41 respondents (22.3 percent), ‘1-3 times per month’ with 40 (21.7%), ‘1-3 times in one semester’ with 10 people (5.4 percent). Overall, female users (60.9%) visited the library more frequently compared to male with 3.91%. Especially, the female response rate answering ‘1-3 times a week’ was the highest.

When analyzing by year, the highest number of respondents was 4th year (62 respondents, 33.7%), followed by 3rd year (25.8%), 1st year (23.9%), and 2nd year (25.0%). And In the cross-analysis of year and frequency of visits, the highest point is the 4th year responding ‘1-3 times a week’ (35 respondents, 19.0%).

When analyzing the frequency of library visits by colleges, the college of Humanities recording 39.7% (73 respondents) showed the highest, followed by college of Social Science with 20.1% (37), college of Natural Science with 15.2% (28). College of Global Studies showed the lowest visit rate. In the cross-analysis of colleges and frequency of visits, the highest point is the college of Humanities responding ‘1-3 times a week’ (35 respondents, 19.0%).

Table 5. Frequency of library visit

			Frequency of library visit				All
			1-3 times a week	4 or more times a week	1-3 times a month	1-3 times in one semester	
Gender	Male	freq.	33	21	14	4	72
		%	17.9%	11.4%	7.6%	2.2%	39.1%
	Female	freq.	60	20	26	6	112
		%	32.6%	10.9%	14.1%	3.3%	60.9%
Year	Year 1	freq.	25	8	10	1	44
		%	13.6%	4.3%	5.4%	.5%	23.9%
	Year 2	freq.	13	6	12	1	32
		%	7.1%	3.3%	6.5%	.5%	17.4%
	Year 3	freq.	20	14	8	4	46
		%	10.9%	7.6%	4.3%	2.2%	25.0%
	Year 4	freq.	35	13	10	4	62
		%	19.0%	7.1%	5.4%	2.2%	33.7%
Colleges	Humanities	freq.	35	19	16	3	73
		%	19.0%	10.3%	8.7%	1.6%	39.7%

		Frequency of library visit				All
		1-3 times a week	4 or more times a week	1-3 times a month	1-3 times in one semester	
Social Science	freq.	21	6	9	1	37
	%	11.4%	3.3%	4.9%	.5%	20.1%
Natural Sciences	freq.	14	4	7	3	28
	%	7.6%	2.2%	3.8%	1.6%	15.2%
Art & Design	freq.	5	2	6	1	14
	%	2.7%	1.1%	3.3%	.5%	7.6%
Biomedical & Health Science	freq.	10	7	1	2	20
	%	5.4%	3.8%	.5%	1.1%	10.9%
Global Studies	freq.	8	3	1	0	12
	%	4.3%	1.6%	.5%	.0%	6.5%
All	freq.	93	41	40	10	184
	%	50.5%	22.3%	21.7%	5.4%	100.0%

4.3. The purpose of using the library

The users' purpose in using the library was surveyed, allowing them to choose three of the many possible responses. As a result, the total number of responses was 436. The results are summarized in Table 6.

The primary purpose of using the academic library was circulation (31.9%), followed by study subjects, homework (17.7%), class (lecture) preparation (11.5%), and reading books/journal/magazines (10.1%). All of the above purposes are items associated with learning or reading, therefore it can be said that users' library using purposes are related to learning and reading. On the other hand, the rate of respondents who visit the library to meet friends or to make use of facilities, or for leisure, was very low (about 5%).

Table 6. The purpose of using the library

Library use purpose	Respondents	Percent
Circulations	139	31.9
For reading books/journal/magazines	44	10.1
Reference service from Librarians	1	0.2
Class (lecture) Preparation	50	11.5
Data collection for research	3	0.7
Interlibrary loans (Documents Delivery Service)	1	0.2
Information retrieval	27	6.2
Using audio-visual materials	31	7.1
Study subjects, homework	77	17.7
Job preparation / qualification	14	3.2
Utilizing electronic equipment (copiers, printers, scanners)	25	5.7
Meet friends	12	2.8
Using rest facilities	9	2.1
Others	3	0.7
Total	436	100.0

4.4. The most used library space

The following Table 7 is the results of question items that asked which space respondents use most. The number of respondents with ‘no answer’ was recorded. As a result, the most used library space was ‘resource reading room’ (53.8%), followed by ‘multimedia information square’ (17.4%), ‘reading room’ (12.5%), and ‘job library’ (10.3%). On the other hand, the most unused space was ‘group study room’ and ‘serials room’, both were 2.2%. The main reason why the serials room is not used is most likely because most serials' articles can be accessed online due to the development of information technology.

When analyzing ‘the most used library space’ by gender, it was found that female users used the following library spaces often: Resource reading room, Multimedia information square, and Reading room. On the other hand, male users used the following library spaces often: Resource reading room, Reading room, and Multimedia information square.

When analyzing ‘the most used library space’ by year, it was found that ‘Resource reading room’ was the highest used library space for most years. When analyzing it by colleges, ‘Resource reading room’ was the highest used library space for most of the colleges. It was found that students in the College of Biomedical & Health Science, compared to other colleges, used ‘Multimedia information square’ and ‘Job Library’ in particular.

Table 7. The most used library space

		Library spaces									All
		No answer	Resource reading room	Serials room	Multimedia information square	Job Library	Group study room	Reading room	Others		
Gender	Male	freq. 0	32	1	12	6	4	17	0	72	
		% .0%	17.4%	.5%	6.5%	3.3%	2.2%	9.2%	.0%	39.1%	
	Female	freq. 1	67	3	20	13	0	6	2	112	
		% .5%	36.4%	1.6%	10.9%	7.1%	.0%	3.3%	1.1%	60.9%	
Year	Year 1	freq. 0	16	0	12	7	1	8	0	44	
		% .0%	8.7%	.0%	6.5%	3.8%	.5%	4.3%	.0%	23.9%	
	Year 2	freq. 0	16	2	3	5	1	5	0	32	
		% .0%	8.7%	1.1%	1.6%	2.7%	.5%	2.7%	.0%	17.4%	
	Year 3	freq. 1	24	1	9	2	2	6	1	46	
		% .5%	13.0%	.5%	4.9%	1.1%	1.1%	3.3%	.5%	25.0%	
	Year 4	freq. 0	43	1	8	5	0	4	1	62	
		% .0%	23.4%	.5%	4.3%	2.7%	.0%	2.2%	.5%	33.7%	
Colleges	Humanities	freq. 1	44	2	13	4	1	6	2	73	
		% .5%	23.9%	1.1%	7.1%	2.2%	.5%	3.3%	1.1%	39.7%	
	Social Science	freq. 0	23	0	6	2	1	5	0	37	
		% .0%	12.5%	.0%	3.3%	1.1%	.5%	2.7%	.0%	20.1%	
	Natural Sciences	freq. 0	13	1	2	4	2	6	0	28	
		% .0%	7.1%	.5%	1.1%	2.2%	1.1%	3.3%	.0%	15.2%	
	Art & Design	freq. 0	7	1	3	2	0	1	0	14	
		% .0%	3.8%	.5%	1.6%	1.1%	.0%	.5%	.0%	7.6%	

	Library spaces								All
	No answer	Resource reading room	Serials room	Multimedia information square	Job Library	Group study room	Reading room	Others	
Biomedical & Health Science	freq. 0	7	0	5	5	0	3	0	20
	% .0%	3.8%	.0%	2.7%	2.7%	.0%	1.6%	.0%	10.9%
Global Studies	freq. 0	5	0	3	2	0	2	0	12
	% .0%	2.7%	.0%	1.6%	1.1%	.0%	1.1%	.0%	6.5%
All	freq. 1	99	4	32	19	4	23	2	184
	% .5%	53.8%	2.2%	17.4%	10.3%	2.2%	12.5%	1.1%	100.0%

4.5. The most used library materials

Allowing the user to choose three possible responses, it was surveyed which materials they used most commonly in the library. As a result, the total number of responses was 305, excluding the ‘no response’. The results are summarized in Table 8.

The rate of respondents answering that they mainly used ‘general books’ is the highest (53.1%), followed by thesis (11.1%), Electronic Information and Audio-visual material (both 10.8%). The response rate for ‘reference materials’ was the lowest.

Table 8. The most used library materials

The most used library materials		Respondents	Percent
Materials	General books	162	53.1
	Serials	31	10.2
	Thesis	34	11.1
	Electronic Information	33	10.8
	Audio-visual	33	10.8
	Reference resources	10	3.3
	Others	2	0.7
	Total	305	100.0

4.6. How to obtain their needed resources (the non-collection resources)

The following Table 9 is the results of question items that concern the most preferred way to obtain needed materials when failing to find the wanted materials. As a result, the rate of respondents answering that they mainly contact librarians is the highest (24.5%), followed by ‘Request for Library Purchase’ (19.6%), and ‘Abandon’ (14.7%). ‘Asking friends and professor’ was the lowest (5.4%).

When analyzing how to obtain ‘Non-collection resources’ by gender, it seems that both female and male users most preferred to contact librarians. However, as a second priority, female users preferred to request for library purchase, but males preferred to search for related materials.

When analyzing how to obtain ‘Non-collection resources’ by year, it was analyzed that abandonment by low-years is significantly higher. As can be seen from Table 9, the higher the year, the rate

to take active solutions increases gradually.

When analyzing the results by colleges, students in colleges of Humanities, Social Science, and Natural Sciences seem to acquire their needed resources within the library more actively. On the other hand, students in colleges of Art & Design, Biomedical & Health Science, and Global Studies seem reluctant to obtain needed resources within the library. The rate of abandonment was very high.

Table 9. How to obtain their needed resources (the non-collection resources)

			How to obtain their needed resources							All	
			Contact librarian	Searching related materials	Request for library purchase	Using other libraries	Asking to friends, professor	Personal purchase	Abandon	Others	
Gender	Male	freq.	18	15	12	5	5	7	9	1	72
		%	9.8%	8.2%	6.5%	2.7%	2.7%	3.8%	4.9%	.5%	39.1%
	Female	freq.	27	11	24	12	5	10	18	5	112
		%	14.7%	6.0%	13.0%	6.5%	2.7%	5.4%	9.8%	2.7%	60.9%
Year	Year 1	freq.	11	4	3	7	4	7	8	0	44
		%	6.0%	2.2%	1.6%	3.8%	2.2%	3.8%	4.3%	.0%	23.9%
	Year 2	freq.	8	4	6	1	2	2	8	1	32
		%	4.3%	2.2%	3.3%	.5%	1.1%	1.1%	4.3%	.5%	17.4%
	Year 3	freq.	11	8	9	5	2	2	7	2	46
		%	6.0%	4.3%	4.9%	2.7%	1.1%	1.1%	3.8%	1.1%	25.0%
	Year 4	freq.	15	10	18	4	2	6	4	3	62
		%	8.2%	5.4%	9.8%	2.2%	1.1%	3.3%	2.2%	1.6%	33.7%
Colleges	Humanities	freq.	19	10	21	5	4	6	5	3	73
		%	10.3%	5.4%	11.4%	2.7%	2.2%	3.3%	2.7%	1.6%	39.7%
	Social Science	freq.	9	7	4	2	2	6	7	0	37
		%	4.9%	3.8%	2.2%	1.1%	1.1%	3.3%	3.8%	.0%	20.1%
	Natural Sciences	freq.	8	5	5	3	2	1	3	1	28
		%	4.3%	2.7%	2.7%	1.6%	1.1%	.5%	1.6%	.5%	15.2%
	Art & Design	freq.	0	2	2	1	0	4	4	1	14
		%	.0%	1.1%	1.1%	.5%	.0%	2.2%	2.2%	.5%	7.6%
	Biomedical & Health Science	freq.	5	2	3	4	1	0	5	0	20
		%	2.7%	1.1%	1.6%	2.2%	.5%	.0%	2.7%	.0%	10.9%
	Global Studies	freq.	4	0	1	2	1	0	3	1	12
		%	2.2%	.0%	.5%	1.1%	.5%	.0%	1.6%	.5%	6.5%
All		freq.	45	26	36	17	10	17	27	6	184
		%	24.5%	14.1%	19.6%	9.2%	5.4%	9.2%	14.7%	3.3%	100.0%

4.7. How to know how to use the library facilities

The following Table 10 is the results of question items regarding the most preferred way to know how to use library facilities. As a result, the rate of respondents answering that they mainly contact librarians is the highest (46.2%), followed by ‘refer to library guide’ (20.1%), and ‘no difficulty’ (15.8%). The rate of ‘asking nearby users’ was the lowest at 7.6%. The rate at which’ abandoned

the use of facilities' was chosen is not low at almost 10%.

When analyzing results by gender, year, and colleges, 'How to know how to use the facility' was showing a similar phenomenon with the above 'how to get the resources'.

Table 10. How to know how to use the library facilities

		How to know how to use the library facilities						All
		Contact librarian	Asking to users around	Refer to library guides	No difficulty	Abandon	Others	
Gender	Male	freq. 27	8	18	10	9	0	72
		% 14.7%	4.3%	9.8%	5.4%	4.9%	.0%	39.1%
	Female	freq. 58	6	19	19	7	3	112
		% 31.5%	3.3%	10.3%	10.3%	3.8%	1.6%	60.9%
Year	Year 1	freq. 20	8	9	3	4	0	44
		% 10.9%	4.3%	4.9%	1.6%	2.2%	.0%	23.9%
	Year 2	freq. 12	3	5	6	6	0	32
		% 6.5%	1.6%	2.7%	3.3%	3.3%	.0%	17.4%
	Year 3	freq. 21	2	13	8	2	0	46
		% 11.4%	1.1%	7.1%	4.3%	1.1%	.0%	25.0%
	Year 4	freq. 32	1	10	12	4	3	62
		% 17.4%	.5%	5.4%	6.5%	2.2%	1.6%	33.7%
Colleges	Humanities	freq. 35	4	11	17	4	2	73
		% 19.0%	2.2%	6.0%	9.2%	2.2%	1.1%	39.7%
	Social Science	freq. 16	2	8	5	6	0	37
		% 8.7%	1.1%	4.3%	2.7%	3.3%	.0%	20.1%
	Natural Sciences	freq. 13	3	9	3	0	0	28
		% 7.1%	1.6%	4.9%	1.6%	.0%	.0%	15.2%
	Art & Design	freq. 6	2	4	1	1	0	14
		% 3.3%	1.1%	2.2%	.5%	.5%	.0%	7.6%
	Biomedical & Health Science	freq. 9	2	3	3	3	0	20
		% 4.9%	1.1%	1.6%	1.6%	1.6%	.0%	10.9%
	Global Studies	freq. 6	1	2	0	2	1	12
		% 3.3%	.5%	1.1%	.0%	1.1%	.5%	6.5%
All	freq. 85	14	37	29	16	3	184	
	% 46.2%	7.6%	20.1%	15.8%	8.7%	1.6%	100.0%	

4.8. Satisfaction with lending period

The following Table 11 is about 'user satisfaction with the lending period'. According to the current library regulations, the loan period for undergraduate students is 7 days.

As a result, it was shown that the loan period that users preferred most was 10 days (43.5%), followed by 15 days (35.3%), and 20 days (10.9%). A similar phenomenon appeared in results comparing by gender, year, and colleges. However, it was shown that students of Colleges of Natural Sciences, Biomedical & Health Science favored a long load period of 20 days the most highly.

Table 11. Satisfaction with lending period

			Loan periods					All
			5 days	7 days	10 days	15 days	20 days	
Gender	Male	freq.	2	9	34	21	6	72
		%	1.1%	4.9%	18.5%	11.4%	3.3%	39.1%
	Female	freq.	2	6	46	44	14	112
		%	1.1%	3.3%	25.0%	23.9%	7.6%	60.9%
Year	Year 1	freq.	2	7	16	9	10	44
		%	1.1%	3.8%	8.7%	4.9%	5.4%	23.9%
	Year 2	freq.	1	2	17	11	1	32
		%	.5%	1.1%	9.2%	6.0%	.5%	17.4%
	Year 3	freq.	0	2	18	21	5	46
		%	.0%	1.1%	9.8%	11.4%	2.7%	25.0%
	Year 4	freq.	1	4	29	24	4	62
		%	.5%	2.2%	15.8%	13.0%	2.2%	33.7%
Colleges	Humanities	freq.	1	3	36	28	5	73
		%	.5%	1.6%	19.6%	15.2%	2.7%	39.7%
	Social Science	freq.	2	3	16	14	2	37
		%	1.1%	1.6%	8.7%	7.6%	1.1%	20.1%
	Natural Sciences	freq.	0	5	7	10	6	28
		%	.0%	2.7%	3.8%	5.4%	3.3%	15.2%
	Art & Design	freq.	1	1	7	3	2	14
		%	.5%	.5%	3.8%	1.6%	1.1%	7.6%
	Biomedical & Health Science	freq.	0	2	6	8	4	20
		%	.0%	1.1%	3.3%	4.3%	2.2%	10.9%
	Global Studies	freq.	0	1	8	2	1	12
		%	.0%	.5%	4.3%	1.1%	.5%	6.5%
All		freq.	4	15	80	65	20	184
		%	2.2%	8.2%	43.5%	35.3%	10.9%	100.0%

4.9. Satisfaction with number of borrowed books

The following Table 12 is about ‘user satisfaction with number of borrowed books’. According to the current library regulations, the number of borrowed books allowed for undergraduate students is 7 volumes.

Results showed that users were satisfied with the current limit of volumes for borrowing. A similar phenomenon appeared in results comparing by gender, year, and colleges. However, it was shown that students of Colleges of Biomedical & Health Science favored less volumes (5 volumes) for borrowing the most highly.

Table 12. Satisfaction with number of borrowed books

			The number of borrowed books					All
			No answers	5 volumes	7 volumes	10 volumes	15 volumes	
Gender	Male	freq.	1	17	37	17	0	72
		%	.5%	9.2%	20.1%	9.2%	.0%	39.1%
	Female	freq.	0	34	43	26	9	112
		%	.0%	18.5%	23.4%	14.1%	4.9%	60.9%
Year	Year 1	freq.	0	23	14	6	1	44
		%	.0%	12.5%	7.6%	3.3%	.5%	23.9%
	Year 2	freq.	1	8	13	7	3	32
		%	.5%	4.3%	7.1%	3.8%	1.6%	17.4%
	Year 3	freq.	0	6	29	9	2	46
		%	.0%	3.3%	15.8%	4.9%	1.1%	25.0%
	Year 4	freq.	0	14	24	21	3	62
		%	.0%	7.6%	13.0%	11.4%	1.6%	33.7%
Colleges	Humanities	freq.	1	13	28	26	5	73
		%	.5%	7.1%	15.2%	14.1%	2.7%	39.7%
	Social Science	freq.	0	13	17	7	0	37
		%	.0%	7.1%	9.2%	3.8%	.0%	20.1%
	Natural Sciences	freq.	0	6	18	2	2	28
		%	.0%	3.3%	9.8%	1.1%	1.1%	15.2%
	Art & Design	freq.	0	5	6	1	2	14
		%	.0%	2.7%	3.3%	.5%	1.1%	7.6%
	Biomedical & Health Science	freq.	0	9	8	3	0	20
		%	.0%	4.9%	4.3%	1.6%	.0%	10.9%
	Global Studies	freq.	0	5	3	4	0	12
		%	.0%	2.7%	1.6%	2.2%	.0%	6.5%
All		freq.	1	51	80	43	9	184
		%	.5%	27.7%	43.5%	23.4%	4.9%	100.0%

4.10. Satisfaction with library services

The items for investigating satisfaction of library services are four as follows: ‘Librarians’, ‘User services’, ‘Document delivery and interlibrary loan’, ‘homepage configuration and use’, and ‘opening hours’. User satisfaction of library services was surveyed by a Likert five-point scale. As a result, It was shown that they were satisfied with librarians’ user services at 52.2%, ‘document delivery and interlibrary loan’ at 41.3%, and ‘opening hours’ at 38%. However, dissatisfaction about ‘opening hours’ was significantly higher at 28.8%.

Table 13. Satisfaction with library services

		Satisfaction with library service						Total
		No answer	Very Satisfied	Satisfaction	Common /neutral	Dissatisfaction	Very dissatisfied	
Librarians' library service	freq.	3	23	73	75	9	1	184
	%	1.6	12.5	39.7	40.8	4.9	.5	100.0
Document delivery and interlibrary loan	freq.	4	11	65	85	16	3	184
	%	2.2	6.0	35.3	46.2	8.7	1.6	100.0
Homepage configuration and use	freq.	4	20	67	80	12	1	184
	%	2.2	10.9	36.4	43.5	6.5	.5	100.0
Opening hours	freq.	4	14	56	57	43	10	184
	%	2.2	7.6	30.4	31.0	23.4	5.4	100.0

4.11. Recency of the collection

The items for investigating satisfaction of collection's recency are six as follows in Table 14. User satisfaction with it was surveyed by a Likert five-point scale. 'Recency of general books' showed the highest satisfaction at 64.6%. On the other hand, 'Recency of audio-visual materials' showed the lowest satisfaction compared to the others.

Table 14. Recency of collection

		collection's recency						Total
		No answer	Very Satisfied	Satisfaction	Common /neutral	Dissatisfaction	Very dissatisfied	
Recency of general books	freq.	3	33	86	42	18	2	184
	%	1.6	17.9	46.7	22.8	9.8	1.1	100.0
Recency of thesis	freq.	4	13	51	93	20	2	184
	%	2.2	7.1	27.7	50.5	10.9	1.1	100.0
Recency of serials	freq.	4	17	69	82	11	1	184
	%	2.2	9.2	37.5	44.6	6.0	.5	100.0
Recency of electronic materials	freq.	4	22	62	81	15	0	184
	%	2.2	12.0	33.7	44.0	8.2	.0	100.0
Recency of audio-visual materials	freq.	4	22	61	68	28	1	184
	%	2.2	12.0	33.2	37.0	15.2	.5	100.0
Recency of reference books	freq.	5	18	50	100	10	1	184
	%	2.7	9.8	27.2	54.3	5.4	.5	100.0

4.12. Diversity of holdings

The items for investigating satisfaction with the collection's diversity are six as follows in Table 15. User satisfaction with it was surveyed by a Likert five-point scale. 'Diversity of general books' showed the highest satisfaction at 59.3%. On the other hand, 'Diversity of audio-visual materials' showed the lowest satisfaction compared to the others. It was found that the satisfaction with the collection's diversity was relatively low.

Table 15. Diversity of collection

		Diversity of collection						
		No answer	Very Satisfied	Satisfaction	Common /neutral	Dissatisfaction	Very dissatisfied	Total
Diversity of general books	freq.	3	27	82	56	14	2	184
	%	1.6	14.7	44.6	30.4	7.6	1.1	100.0
Diversity of serials	freq.	4	15	70	80	13	2	184
	%	2.2	8.2	38.0	43.5	7.1	1.1	100.0
Diversity of thesis	freq.	4	10	53	97	19	1	184
	%	2.2	5.4	28.8	52.7	10.3	.5	100.0
Diversity of electronic materials	freq.	4	19	57	88	13	3	184
	%	2.2	10.3	31.0	47.8	7.1	1.6	100.0
Diversity of audio-visual materials	freq.	4	14	63	82	20	1	184
	%	2.2	7.6	34.2	44.6	10.9	.5	100.0
Diversity of reference resources	freq.	4	11	53	103	11	2	184
	%	2.2	6.0	28.8	56.0	6.0	1.1	100.0

4.13. Satisfaction with facilities and environment

The items for investigating satisfaction with ‘Facilities and Environment’ are shown in the following Table 16. User satisfaction with them was surveyed by a Likert five-point scale. User satisfaction with facilities and environment was very low, excepting the ‘Loan Desk’. Especially, satisfaction with the Reading Room, Study Room, Soundproofing, and Air conditioning was very low. Therefore, the library needs to make an effort to improve the library’s circumstance and facilities.

Table 16. Satisfaction for facilities and environment

		No answer	Very Satisfied	Satisfaction	Common /neutral	Dissatisfaction	Very dissatisfied	Total
Loan Desk	freq.	3	26	98	48	8	1	184
	%	1.6	14.1	53.3	26.1	4.3	.5	100.0
Reading Room	freq.	0	0	70	58	29	5	184
	%	0	0	38.0	31.5	15.8	2.7	100.0
Bookshelves & Reading Tables	freq.	4	13	74	73	19	1	184
	%	2.2	7.1	40.2	39.7	10.3	.5	100.0
Study room	freq.	6	16	55	77	28	2	184
	%	3.3	8.7	29.9	41.8	15.2	1.1	100.0
Job Library	freq.	4	35	77	55	12	1	184
	%	2.2	19.0	41.8	29.9	6.5	.5	100.0
Multimedia Information Square	freq.	4	33	96	40	10	1	184
	%	2.2	17.9	52.2	21.7	5.4	.5	100.0
Audio-visual facilities	freq.	5	27	71	63	16	2	184
	%	2.7	14.7	38.6	34.2	8.7	1.1	100.0
Air-conditioning	freq.	5	26	82	39	29	3	184
	%	2.7	14.1	44.6	21.2	15.8	1.6	100.0
Soundproofing	freq.	5	8	42	69	49	11	184
	%	2.7	4.3	22.8	37.5	26.6	6.0	100.0

		No answer	Very Satisfied	Satisfaction	Common /neutral	Dissatisfaction	Very dissatisfied	Total
Rest areas	freq.	4	19	84	57	15	5	184
	%	2.2	10.3	45.7	31.0	8.2	2.7	100.0
Cleanliness	freq.	4	26	83	55	13	3	184
	%	2.2	14.1	45.1	29.9	7.1	1.6	100.0

4.14. The need for additional space

The items for investigating the need for additional space are as follows in Table 17. As a result, ‘Book Cafe & Relaxation space’ showed the highest demand at 38.6%, followed by ‘Study room & discussion area’ (18.5%), and ‘Cultural Program Space’ (16.3%).

Table 17. The need for additional space

		The need for additional space						Total
	No answer	Book Cafe & Relaxation space	Media studio space	Personal notebook space	Cultural Program Space	Study room & discussion area	Others	
freq	2	71	20	23	30	34	4	184
%	1.1	38.6	10.9	12.5	16.3	18.5	2.2	100.0

4.15. User training

In the section surveying user training, questions about number of user education, user education awareness, and awareness of the need for user education were investigated. As shown in Table 18, the rate of users who don't know if there is user education was very high at 70.7%. The rate of users who have no experience with user education was 83.7%.

We analyzed by cross-analysis to investigate whether or not there are any relationships between these two variables. As shown in Table 18, users who don't know about the library's user education program have never been trained at the library. However, the approximately 40% of users who know about it did not receive user education. This means that the library does not make enough effort to promote their user education services.

Table 18. User education awareness and Number of user education taken

		Number of user education					All	
		No answer	1	2	3 or more	No experience		
user education awareness	No answer	freq.	2	0	0	0	0	2
		%	1.1%	.0%	.0%	.0%	.0%	1.1%
	Know	freq.	2	17	8	1	24	52
		%	1.1%	9.2%	4.3%	.5%	13.0%	28.3%
	Don't know	freq.	0	0	0	0	130	130
		%	.0%	.0%	.0%	.0%	70.7%	70.7%
All		freq.	4	17	8	1	154	184
		%	2.2%	9.2%	4.3%	.5%	83.7%	100.0%

The following Table 19 is the results of surveying the users' awareness of user education's necessity. 63.1% respondents answered that user education programs are necessary, 17.4% of them said that they are strongly needed. Users responding that user education programs are not necessary were only 4.4%. Therefore, libraries are required to provide user education programs more actively. In addition, users who know about the user education program responded that user education programs are required. 41% of users not knowing about the user education program responded that user education programs are required.

Table 19. Awareness of the need for user education

		awareness of the need for user education							All
		No answer	Very necessary	necessary	Commons	Unnecessarily	Very unnecessary		
user education awareness	No answer	freq.	2	0	0	0	0	0	2
		%	1.1%	.0%	.0%	.0%	.0%	.0%	1.1%
	Know	freq.	7	12	27	6	0	0	52
		%	3.8%	6.5%	14.7%	3.3%	.0%	.0%	28.3%
	Don't know	freq.	4	20	57	41	6	2	130
		%	2.2%	10.9%	31.0%	22.3%	3.3%	1.1%	70.7%
All	freq.	13	32	84	47	6	2	184	
	All %	7.1%	17.4%	45.7%	25.5%	3.3%	1.1%	100.0%	

4.16. Other requirements

In addition, requirements that users commented upon at the questionnaire question 'Other suggestions' are summarized as follows:

- ① lack of recent data
- ② Homepage renewal
- ③ Replacing and expanding facilities (tables, chairs, computers, cooling and heating)
- ④ Extending the library opening hours
- ⑤ Lack of user education
- ⑥ Lack of staff's kindness
- ⑦ Lack of reading room
- ⑧ Establishing the lounge for relaxation
- ⑨ Supplement of major publications
- ⑩ Improve cleanliness
- ⑪ Lack of study rooms
- ⑫ Not well soundproofed
- ⑬ Improving the service process and speed
- ⑭ Old compared to the other campuses
- ⑮ New library building

5. Discussion & Conclusions

Academic libraries are places for providing information needed by universities' members. Academic libraries have a role in effectively providing information resources which their academic members need for teaching and research activities. These days, academic libraries play these fundamental roles, as well as transforming into a complex space for communication, relaxation, and information commons.

According to the advancing of information technology, Korean academic libraries have been continually striving to reflect environmental changes to their libraries and meet users' needs in terms of building, remodeling, information resources, facilities, and services. This study purposed to discover whether or not academic libraries are actually reflecting these changing roles, selected K University as the research target and surveyed user satisfaction there.

Findings are summarized as the following seven items. First, the frequency of library visits at University K was on the high side. When analyzing it by gender, year, and colleges, female students, higher years, and College of Humanities recorded higher compare to others.

Second, the primary purpose of using the academic library was associated with learning or reading, therefore it can be said that users' library using purposes are related to learning and reading. On the other hand, the rate of respondents who visit for leisure was very low (about 5%). This phenomenon could be occurring because academic library users recognize the library as a place for learning, but it could be because their library is not equipped with enough facilities for leisure, or is not served as information commons space.

Third, the most used library space was 'resource reading room', followed by 'multimedia information square', and 'reading room'. The main reason why the serials room is not used is most likely because most serials' articles can be accessed online due to the development of information technology.

Fourth, the most used library materials were 'general books', the most unused were 'reference books'. The reasons why users do not use the reference materials seem to be due to internet's resources. In the past, users came to the library to use reference resources such as maps, dictionaries, encyclopedias, guides, bibliographic reference sources, and so on. However, such data are available on the internet. For example Google Maps, Wikipedia Encyclopedia, various Glossaries, and Databases are available on the Internet.

Fifth, the most preferred way to obtain their needed materials when failing to find the wanted materials was 'Contact librarian', 'Searching related materials', and 'Request for library purchase'. All of these belong to aggressive solutions. Therefore, it can be said that users have a very high intention for solving any problems within the library. However, students in colleges of Art & Design, Biomedical & Health Science, and Global Studies seem reluctant to obtain needed resources within the library. The rate of abandonment was very high. A similar phenomenon occurred in terms of facility use.

Sixth, university K's users are usually satisfied with the loan period, number of borrowed books allowed, librarians' library service, document delivery and interlibrary loan, Homepage configuration and use. However, dissatisfaction about 'opening hours' was significantly higher.

Seventh, the rate of users who don't know whether there is user education was very high, the rate of users who have no experience with user education was quite low. Additionally, most users

want the library to provide a library education program. Therefore, the library has to make an effort to develop the user training programs and to promote their user education service.

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