From Librarians' Perspectives on Physical Accessibility of Public Libraries*

사서의 시각으로 본 공공도서관의 접근성

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ABSTRACT

The purpose of this study is to ascertain librarian's perceptions on their users' library access and its patterns. Interviews with seven library staff reveal physical accessibility issues including spatial relationships between libraries and other facilities such as shopping malls and schools, travel distance, transportation mode, and temporal perspectives of library access. The results from the interviews corroborate the findings from secondary analysis using household travel data. However, interviewees do not have a clear picture of how much their users travel and spend to access their libraries. This is true, even though these factors are critical to analyze physical accessibility. Based on the findings, this study makes recommendations to improve the accessibility of public libraries. Suggestions include the concept of sponsorships with other facilities, the placing of material drop-boxes on the main route, and providing library programs during lunch time.

초 록

본 연구의 목적은 도서관 이용자의 이용과 그 패턴에 대한 사서의 인식을 조사하는 것이다. 7명의 도서관 직원과의 인터뷰를 통해 도서관과 다른 기관, 쇼핑몰이나 학교와의 공간적 관련성, 도서관 접근시 이동거리, 교통수단, 시간적인 특징들에 대한 사서의 시각을 분석하였다. 인터뷰 결과는 가족단위의 이동에 대한 정보를 분석한 결과를 확증하고 있었다. 그러나 인터뷰 참여자는 이용자의 이동거리나 이동시간이 물리적 접근성 분석에 중요한 요소들임에도 불구하고 이에 대한 이해가 부족했다. 결과를 바탕으로, 본 연구는 공공도서관의 접근성 향상을 위해, 다른 기관과의 후원계약체결, 주 도로 상의 반납함 설치, 점심시간을 이용한 도서관 프로그램 제공 등을 제안하고 있다.

Keywords: physical accessibility, spatial relationship, transportation mode, travel distance, travel time, public library, librarian perception
물리적 접근성, 공간적 관계성, 교통수단, 이동거리, 이동시간, 공공도서관, 사서의 인식

1. Introduction

Accessibility has been conceptualized in many different ways as well as in many different academic fields. Researchers in transport geography focus on spatial relationships, and refer to it as "the proximity of one location to other specified locations" (Kwan & Weber, 2003, p. 341). Web developers generally consider web accessibility in the context of the web access of individuals with disabilities (Slatin & Rush, 2003). Recently, aspects such as the "social norms and the attitudes of a particular social world" (Burnett, Jaeger, & Thompson, 2008, p. 53) have also been examined in the context of information access. Additionally, accessibility has been analyzed from cognitive, economic, intellectual, and political perspectives.

Several factors deriving from these various perspectives are found to either facilitate or constrain access to activities. Physical accessibility, in particular, is a fundamental measure of the equal chance to take part in activities (Weibull, 1980). In spite of the fundamentality of physical accessibility, relatively little research has been carried out to measure the physical accessibility to public libraries.

Furthermore, researchers have paid very little attention to the perspective of public librarians on library usage and patterns. Public librarians' perceptions are keys in the accessibility analysis in that they participate in the development of library service programs for their users. In terms of temporal aspects, for instance, the schedule of library literacy programs might be based on librarians' perceptions of the times of their users' visits during the day. If librarians do not have a clear view of their users' visits, the program might not be participated in by users, even though the program is valuable to them.

Therefore, the purpose of this study is: (1) to ascertain librarians' perceptions on their users' library access; (2) to enhance our understanding of library access and use; and (3) to provide recommendations to improve the physical accessibility of public libraries in the study area (Puget Sound, WA, USA). Through analyzing interviews, this study provides meaningful information regarding library use patterns and physical locations of public libraries. The findings from this study are expected to be useful for library planning and optimal location selection.

2. Literature Review

2.1 Definition of Accessibility

There is no concise definition regarding physical accessibility. Considering the scope and context of the research, therefore, this study defines the concept of physical accessibility; specifically the concept is investigated operationally for users of public libraries in the United States. As suggested by Iwarsson and Stahl (2003), physical accessibility can be conceptualized using the following two components and the subsequent synthesis of these components:

(1) The personal component;

(2) The environmental component; and

(3) An analysis juxtaposing the personal compo-

nent and the environmental component. (p. 62)

In terms of the context of this study, the personal component of physical accessibility focuses on such issues as whether library users have a mode (or modes) of private transportation and, if they do, which mode (or modes) of private transportation they have. The environmental component of physical accessibility examines barriers to access such as the availability of public transportation and the characteristics of public facilities that affect the ability of library users to physically access the library.

From this perspective, the physical accessibility of public libraries can be defined as the degree of ease with which a library patron is able to use a library to obtain a specific set of services in a specific environmental context. The physical components of accessibility, thus, can be used to explain whether the effort it takes for individuals to get to a public library is acceptable to the library user group themselves (de Jong & van Eck, 1996).This accessibility also depends on the transportation system and the spatial distribution of public libraries and facilities such as schools and shopping malls relative to the starting point of library users (Liu & Zhu, 2004).

2.2 Factors Affecting Library Access

Researchers have been interested in the physical issues of library accessibility including the factors which affect library use (Cole & Gatrell, 1986; Hayes & Palmer, 1983; Obokoh & Arokoyu, 1991; Osiobe, 1981; Palmer, 1981; Sannwald, 2001), library facility

location (Dunstan, 1977; Freestone, 1976; Koontz, 1997; Park, 2005), and social economic dimensions (Mladenka & Hill, 1977). The physical accessibility issue is related to library utilization; a high degree of accessibility elicits an increase of library use and vice versa.

Koontz (1997) identifies factors increasing or decreasing library use through reviewing previous research. Of those, in terms of the scope of this research, the following factors regarding physical access are considered: distance, availability of transportation, type of transportation, topological barriers, and shopping center location of library facility. Distance between locations (e.g., library and home) has been recognized as a critical measure to determine individuals' activities.

Availability of transportation and transportation modes likewise are strongly related to library use. To examine factors that influenced use/non-use of public libraries, D'Elia (1980) developed a model comprised of five factors: individual characteristics, awareness of library services, perceived accessibility to the library (e.g., transportation), perceived ease of use of the library, and use of nonpublic libraries. Through the survey, she concluded that the frequency of cultural activities, reading skills, and the perception of library accessibility (i.e. the perceived ease of access by transportation) are the factors differentiating users from non-users. This statement is supported by other research (Gallup International, 1976; Hayes & Palmer, 1983; Park, 2005).

Recently, the development of network technologies has made ease of access to information possible.

This is a reason of decrease of library use (Libraries, 2001). On the contrary, the result of some research suggests that the Internet is co-related with public library use (D'Elia, Jörgensen, Woelfel, & Rodger, 2002). A large number of internet users use various public libraries simultaneously for seeking information. While it is true that people can access many of the resources provided by public libraries via the Internet without actually setting foot in them, Bertot, McClure, Jaeger, and Ryan (2006) point out that individuals in poverty visit libraries to gain knowledge through the Internet; in other words, they require physical accessibility in order to use non-physical resources. Thus, in the Information age, physical access to public libraries is a major issue for information access and alleviation of the information divide.

3. Methodology

In the original study, household travel data as secondary data including participants' daily activities with time were analyzed. Interviews were used to confirm the findings from the travel data analysis, and to obtain the perspectives of public librarians on the accessibility issues. A more detail description of the interview method is explained in the following sub-sections.

3.1 Findings from Secondary Data Analysis

The purpose of secondary data analysis was to explore library accessibility in the daily lives of library users. In particular, the spatila relationship between library and other facilities, the relationship between travel distance and library use, transportation modes, and temporal perspectives of library access were studied. Finding from the analysis of household travel survey data collected in the Puget Sound Region, US in 2006 are as follows:

(1) After analyzing the collected data, four types of library access patterns were identified: single-destination, en route, base camp, and trip-chaining. Among these, the last three (types of multi-destination trips, a concept overlooked in previous publications) accounted for about 80% of all library access. With this in view, taking multi-destination trips into account in the development of library services and attention to research related to library access would help librarians and researchers better understand library users' behaviors.

(2) Library visits were geographically related to locations of other facilities such as groceries, shopping malls/department stores, restaurants, schools (K-12), government offices. Regarding site selection, the locating of libraries in close proximity to such facilities might increase library accessibility by decreasing travel costs in multi-destination trips. Also, partnership with these facilities is recommended; in particular, collaboration with K-12 schools may increase students' recognition of public libraries as well as the overall use of public libraries.

(3) Travel distance is a major factor influencing

access to public libraries. Setting up distance-based service areas could increase our understanding of the characteristics of library users and could offer implications for the development and redesign of library services. Additionally, the travel distance of users in rural areas is greater than that in urban and suburban areas. This indicates that travel distance could be a barrier for users to reach public libraries in rural areas. To diminish travel distance and time, public librarians might be advised to consider digitization of contents and Information and Communication Tools (ICT) in delivering information. Traditional services, such as bookmobiles or home delivery services can be considered as well.

(4) A car, van, or truck is the most frequently used (80%) form of transportation to reach public libraries. However, in urban settings bicycling and walking were used more often than in other areas. Therefore, it is recommended that libraries located in urban areas consider the safety of the external environment, especially during night operating hours. Regarding users in Base Camp Trips, the most frequently used mode of transportation was walking. Although statistical significance could not be established, it was found that users went by foot to the library nearest their workplaces between the hours of 11 am and 2 pm. Public libraries located near office buildings should consider making information services particularly available for workers during the lunch hour.

(5) In terms of the times of library visits during the day, library visits occurred from 9 am through 8 pm. A look at the employment status suggests that the non-employed often used libraries between 10 am and 4 pm, while the employed usually used libraries after 4 pm. In light of this, it is recommended that public libraries consider developing library services and times of such service with respect to the various employment statuses of users.

3.2 Interview Questions

To obtain interviewees' perspectives on library usages and patterns, the following questions were asked:

(1) Where do your users come from?

(2) Do you have the impression that they are primarily local or that they travel some distance to come to the library?

(3) How does it appear to you that they come to the library (e.g. personal vehicles, public transportation, etc.)?

(4) When do they usually use your library during the day?

Also, during the interview, questions to obtain corroboration of conclusions drawn from the secondary analysis were asked. Even though secondary data analyses allow researchers to analyze social phenomena in inaccessible settings, the interpretations of a secondary analyst can be limited due to the lack of the researcher's knowledge of the setting. Therefore, inter-

views with librarians in the study setting enable the researcher to ensure the credibility of interpretations of secondary analyses. Those questions include:

(5) What are your interpretations of findings from the secondary data analysis?

(6) What are implications of the findings for planning library services and facilities?

3.3 Participant Selection

Library staff members who work in the library systems in the Puget Sound Region were purposely selected. The directors of five library systems including King County Library System, Kitsap Regional Library, Pierce County Library System, Seattle Public Library, and Sno-Isle County Library System were contacted. Based on the purpose of this study and interviews, the director of each library system recommended the proper person(s) to interview. A total of seven interview participants were selected from the library systems. At least one library staff member was selected for each library system; two interviewees from two library systems participated. With one exception, a public service project manager, all participants were librarians.

3.4 Interview setting

The interviews were held by one of three methods: face-to-face, web conference, and phone. First, face-to-face interviews were conducted with three interviewees at the library for which they are working,

providing a comfortable and quiet setting. These interviews were recorded using an audio-recording device. Second, the web conference was carried out using Elluminate, a web conferencing tool offered by the researcher's home institution. Due to time conflict during scheduling an interview, this tool was used, but the effectiveness of interview was similar with the face-to-face method. All conversations during the interview were recorded using the recording function provided by the system. Last, phone interviews were conducted with two participants. Even though the interview procedure was similar with the face-to-face and web conference mode, these interviews were not recorded. However, the conversations were noted using a pencil and paper. Interviews using face-to-face and Elluminate were conducted about 30 minutes, while it took about 20 minutes for telephone interviews.

3.5 Data Collection Procedure and Instruments

To set the date of the interviews, the available date of each participant was chosen during the process of confirming participation via emails; the first email included the purpose and brief description of the study as well as the invitation request. After setting up the interview date, brief findings from the secondary data analysis were sent to interviewees. Reminder emails were sent to the interviewees the day before the interview.

3.6 Data Analysis

After transcribing the interviews, transcripts were coded into and analyzed according to four accessibility issues. These issues are: spatial relationships between libraries and other facilities, travel distance, transportation mode used for library access, and temporal perspective of library access. Through this analysis, library usage and patterns were identified and accessibility issues which are not identified in the secondary data analysis, were ascertained.

4. Findings

4.1 Spatial relationship between library and other facilities

As seen in the brief findings from the secondary analysis, multi-destination trips (80%) are common. This pattern was also identified in several of the interviews:

Co-location is a big thing, because we find that our users want to do other things when they make a trip, and so that provides a lot of convenience to folks.

Southern part of county... They [libraries] are near shopping areas. They [library users] might be incorporating that into a trip. Others are more in small towns⋯ and near schools. So, parents are picking children up and coming back ⋯they are

stopping at the library on the way home. And for some people it is dedicated a trip. They go to the library every three weeks when their books are due.

As identified, some users made multi-destination trips with the library included as one of the destinations. Others made single-destination (library) trips. As mentioned in the above quote, libraries are related with shopping malls and schools in terms of users' visitation behavior. Some interviewees report that among facilities which are spatially related to libraries in terms of visits, schools are the most common:

We work really closely with all of our schools. We either go or do things with them, or the kids come on a class visit to the library from a walkable distance. Some do and some don't⋯ Some of them lost staffing for that. We are kind of taking on that role informally. It's not uncommon for a class of thirty 5th graders to come to the library. Some school districts provide transportation and give them a bus. During the class day, they have a field trip to the library.

There are thirteen school districts in [the] county. I have a half of school districts, that are really engaged and promoting the services and are having those students and that is helping their students. But, others aren't. I need to understand why they are not, what do I need to do? What do I need to do to help librarians make that change? Because,

I do believe providing out of school support for families is a critical piece of what we stand for as a library system.

We don't have a lot of collaboration with schools. We go to school. Since school libraries in the area are experiencing budget cuts, they are turning to public libraries to help support students. We are looking at a new way of partnering with schools. We haven't done a lot.

Although the level of collaboration between libraries and schools was somewhat low, as mentioned in the above quotes, libraries did, in fact, work with schools; students took field trips to public libraries and public libraries provided students with library programs. In economically challenging times, libraries have tried to collaborate with schools to support them. On this score, public libraries and schools had a close relationship in supporting each other.

These relationships of libraries with other facilities were connected to the issues of library facility planning such as the selection of location. As quoted below, the best locations for public libraries are places in which the traffic is high rather than where library users live. Therefore, it is expected that co-location with high traffic facilities such as restaurants and shopping malls may increase the library traffic as well:

My director is very careful about where we place our library. Often times when we work with communities, they said to put it where all the houses are⋯ No! No! It has to be where the traffic is. The businesses are where these things [restaurant, shopping malls, etc.] are because that's where the high traffic is.

However, one librarian argued that co-location with other facilities such as shopping malls was not always connected to the increase of library usage rate. How busy the area a library is placed in is more important than the co-location. The "main street of the community" would be a criterion of the selection of future library location:

We have one library that I think is probably our busiest. It is busy and poorly undersized. It is on the main drive⋯ main street of the community... it is there⋯ I mean, it helps that five years ago, they built a huge shopping complex across the street, but as for our traffic, it didn't really impact us ⋯ because we were already really busy. So for them it was location.

In terms of the relationship with other facilities, some barriers of accessibility were identified during the interviews. Even though co-location with high traffic facilities enhances the accessibility of public libraries, the cost of land use is a barrier to the proper locating of facilities. Due to cost, the library staff has difficulty in selecting a place near those facilities:

We love to have a branch in a shopping mall, but it's very expensive. They don't want to donate it.

A way to address this cost barrier was suggested in one interview. As quoted below, a librarian defined a public library as "a high traffic facility." Therefore, co-location with public libraries is expected to increase the traffic of facilities in the area as well as that of public libraries:

We bring you more traffic because we will be there. Sometimes we must help them understand we are a high traffic facility. People come to us··· if you are around us, you are there. Not everybody has believed that a public library is a high traffic area··· that's very true and we are very aware of it.

Another barrier identified regarding library usage was the administrative relationship of libraries with other facilities. As quoted below, one librarian outlined how they made successful and challenging relationships with school districts according to their administrative structure. In the collaboration with school districts, supportive relationships between libraries and schools were restricted due to the governmental structure in the district. As was commented on by the interviewee, an enhanced understanding of public libraries, what libraries can do to accomplish the goals of a school district, can lead to a successful relationship between libraries and school districts or individual schools.

Frankly, individual schools work with us, but as a district, district wide support from them, it hasn't been successful. One part of this, just their own

administrative structure, how they work within themselves. They have struggled in their own administration. So, we find a school district that has strong leadership, that seems to have a stable environment as far as the administration goes, we are able to establish a pretty good relationship with them. Ones that are struggling··· that may have been caught in "No Child Let Behind"··· that kind of thing··· They are a little more challenging for us as a district to work with. They are under such governmental structure that they may not even be able to see the forest for the trees in terms of working with the library system. My job is then to work with them and to convince them I can help make things better.

4.2 Impact of Distance on Library Access

During the interviews, the question of travel distance was hardly answered since interviewees did not know the exact number of miles of their users' travel. This is clear as stated below by a library staff member:

I don't have any quantitative data, we haven't analyzed the system broadly. In the situation, users use three or four libraries, 10 or 15 miles··· 46 libraries are spread out throughout the county··· Because they are pretty close geographically in comparison···5 or 10 miles apart.

However, there were some comments about dis-

tance and about librarians' attempts to address the distance-related barriers to library access. Public libraries in the study area provided bookmobile services for the people living in the area far from the nearest library. In one interview, in particular, distance was seen as a critical impediment to library access:

We have other communities, eastern Snohomish County that we serve⋯ that have no telephone service. There is no cable and they are so far in a valley, going to get that they can't get satellite. So, they also get in the car and drive ... maybe 30 minutes to the nearest library. We do have a book mobile service for that community⋯ but it's very challenging serving people who can't get to the building. And we have a huge collection of electronic resources⋯ with our remote customers in mind⋯ it is very sad that they can't access them out in that little valley where they can't get the resources. No dialog, no cable, and no satellite.

We run three bookmobiles. We take the library to the area that we know the issue of not having a adequate bus and not having a car. They are just never going to get there. For me it's important, because I know families are busy ⋯ the choice is not by the parent taking their children on Saturday and evenings to the library. How can we make sure that that child is exposed to public libraries? For some of those children, the only way we do that is by taking our bookmobiles to the community.

Since this rural area has no internet connectivity, the bookmobile service provides an information access point. In all counties, bookmobile services were well-equipped and provided library services. However, as noted below, even though bookmobile services were provided, some people did not use them, while others took the services. This indicates that library access is not limited by distance, but by the will of those who travel to gain the service:

Bookmobile service for rural communities⋯ We are consistently looking at ways to improve that, to take it to schools, to get a lot of kids in. Community stops are⋯ some are very well-used, but some aren't. I think the people in this class, in this part of county, have made a deliberate choice and they know they are going to have to travel. I don't think it's an impediment for them, just part of their will.

Another librarian identified environmental conditions as an impediment to library access. As stated below, the dangerous environment, busy streets, and lack of pedestrian roads hampered students in going to the library in spite of the closeness of the library and the school:

Even though a library may be fairly close to a school distance-wise, the accessibility becomes a problem. Because, for example, our Parkland Library is on Pacific highway south, one mile down on the other side of the street is one of Bebble school district, one elementary school.

We actually work closely with Bebble school district and have a very strong relationship. But that elementary school struggles to bring the children to the library because bus costs are expensive for a mile, but there is no sidewalk or crosswalk in that area⋯ to allow them on a busy street with traffic 40 miles an hour to get the class. To just walk back and forth... We tried, but it is too dangerous.

In terms of environmental conditions, road networks forced people to travel further, and thus, became a barrier to library access:

Infrastructure is one of the reasons of long travel distance in [the] County. The road structure of the county is definitely in support of those numbers. They cannot cross some areas because there is no road to connect those two areas.

One reason why people go to libraries far from their home rather than to the nearest one was found in the following quote:

The other thing about the transit system in this county is that it is really all focused ⋯ everybody goes from where they are to Tacoma. Everything drives down there. A lot of services only are off to Tacoma. All the health buildings in Tacoma⋯ we have what we call family support services in eleven places outside⋯. It's wonderful, but it's not full services⋯ it means everyone focuses to go into Tacoma to do something. They don't

go to this library⋯ they don't go behind, because it is behind them.

This quote indicates that most of people's activities took place in a specific city because of the specific services to be found there. Since people likely make trips with relatively low cost, they tend to go to area with a high concentration of the services and materials they need. In this quote, even though a library was located nearer to people's home than other libraries, they did not use it because in doing so they might have to spend more in the context of their multi-destination trip situation.

4.3 Transportation Mode Selection

Regarding transportation modes used for library access, all interviewees agreed that a car is the most frequently used transportation mode. However, the interviewees have varying attitudes regarding public transportation use. One librarian reported, as follows, how closely libraries in the county are located to bus stops:

All of the libraries are served by our community transit. There is a bus route within usually a block or two of each library. And depending on the library, since we have a big transit down there, a lot of people come from Seattle.

In contrast, other librarians noted, as follows, that their transportation systems did not successfully cover all areas of the county they served:

We don't have public transportation systems like other urban and suburban areas. We don't have subways, trains, bus stop systems as large cities do.

Our bus structure is limited. One of the things we do is ⋯ on anything we publish on our website ⋯ we link to the transit page. Most libraries are not close enough to a bus⋯ we are just about to build a brand new library⋯ we are very pleased that there is a bus stop right out in front⋯ Unfortunately, we don't have adequate bus transportation.

Our transportation system is not as robust as we would like it to be. If they are going to take a bus going to libraries⋯ An hour to get to the library, half hour program, and an hour to get back to home. They could spend half a day. Mothers and small children, aren't going to do that. It's too hard. That's why we continue to run our book mobiles.

According to these quotes, library access using different transportation modes were limited by the quality of the public transportation system. This issue is also related to the issue of the number of cars available in the household, as quoted below. For some community groups, their library use could be limited by not having enough cars within the household. Even though library officials addressed this limitation by changing program schedules for moms and children, this problem, in fact, restricts the time users can go to public libraries:

Sumner has a significant Hispanic population. What we found over the years is, they often have only one car, so that when we have worked to figure out how would we encourage the family to come the library⋯ it's not the traditional American style where mom has a car, and father has a car. So that if we do things during the daytime, the mother can't bring their children, because she has no transportation. So when we looked at programming, we started to do a better job of doing it in the early evening, right around dinner and after father has come home, then the whole family comes to the library. But it took us a little while to start to understand some of that dynamic ⋯ what would be appropriate responses to that. We change the schedules of how we do things.

Other transportation modes identified during the interviews are walking and bicycling. As quoted below, even though people accessed libraries by foot or bicycle, these efforts were limited by the weather and insufficient road networks for walkers or bicyclists:

Walking is not the highest priority, because so many people get there by car.

The barrier of using bicycle and walking is WEATHER. Rain does not allow people to access libraries by foot or bicycle.

We depend on that family to bring their children to the library, because they can't walk to the building. We have several buildings in more rural environments. Our Grahm library is surrounded by rural communities. It's a city but there is no sidewalk. So children do not walk …. It's not realistic. When teens walk, there are serious accidents with cars and etc. That's a real concern for us. It isn't just whether or not it is close to a building.

4.4 Temporal Perspectives of Library Access

As with travel distance, interviewees did not have a clear picture of how much time library users spent for library use. However, they were aware of when people visited public libraries during the day. The hourly time of library visits is broadly classified into four time frames: morning, lunch, afternoon, and evening. In the morning, the libraries were mainly used by children and seniors. During this time, public libraries generally provide story times for children and moms who bring their children to the library. Additionally, seniors were also popular libraries users at this time.

Children's program in the morning time… We have young families due to military base.

Over with the islands, a lot of retirees… They like to be there in the morning. They don't like to drive in the dark. I am serious, they don't….

The morning is only busy in communities that have older populations

Morning time is story times for children.

In one interview, library programs during lunchtime were identified. A library staff member reported that book discussion groups were scheduled to meet during lunch, even though few people participated. Some libraries are not frequently used at lunchtime. One librarian reported:

Lunch time hours is probably one of quietest time periods. Libraries are used in evenings are used, but not heavily used as much at lunch.

During lunch, mothers with children and seniors were still the main users at this time period.

However, as one librarian stated, "then, numbers drop off until school kids come back." In the afternoon, heavy users were students after school. In particular, if libraries are located near schools, it appears that libraries were full of students:

In the communities that are further away, after school is huge … some of them... we have got several libraries which have three or four schools in walking distance, and there are not enough places to sit down… I am serious. They have wall-to-wall students. They are social and educational purposes. It really depends on the building.

During the evening, different user groups visited

public libraries; workers were the main users at this time:

> Services for workers during evening time··· Check out, pick up the holds, if we provide some programs between 5 and 6. We provide author programs, book group meetings, public meeting room use － Any kind of group you can imagine are typically meeting in these rooms in the evening. Community group, Homeowner association, etc.

> We have another··· that is··· I am thinking Mochkeer library··· it's a planned community and it's near all the schools. It's also a bedroom community for people who work for Boeing. So, they are going to the plant and coming home at night and they drive by the library. They are usually picking up their kids.

> Evenings are busy at the library, which is open until 9 o'clock. The shopping here is open until 9:30. So that makes sense.

4.5 Other Accessibility Issues

In addition to the issues discussed so far in this section, several other accessibility issues were identified in interviews. First, restriction of library use to people living outside specific cities is an issue. This barrier of library access was raised by one librarian as follows:

> ··· library users [from another region] can use

our services and materials, but our customers cannot do the same thing [with their services]. We don't have a reciprocal agreement.

This quote indicates the relationships between city and county library systems. While city residents can use the libraries in the county, the county residents who live outside the city limits cannot use the city libraries for such services as checking out materials.

The next issue is access to library services for people in secured areas such as a military base. In the study area, two counties have military bases in which the access is severely controlled. This problem occurs at the gate and restricts entry onto the secured base. This huge security issue was a snag in the provision of library services to the community on the base:

> This is the force··· one of the challenges is that this is a closed access, because it's a military base··· they have huge security issues. We are just starting to figure out how to work with them. There are five elementary schools on the base. And that school district, ···but it doesn't mean we can get on base even though the school district encourages us to work with them. You have to go through security. Security, depending on what the state of war is in this country, can be difficult.

Another issue is related to the free wifi services provided by public libraries. Free wifi services are currently attractive to users, and allow people to go to public libraries to gain the services. As one

librarian outlined in the example below, people go to public libraries to access the Internet through wifi. Since wifi services can be used outside the library building, people are using the service outside of library hours. Therefore, this new purpose of library access raises security issues, especially after library hours:

> The other thing that we do is we have a lot of electronic resources, wifi in all of our buildings⋯ even the really tiny libraries out in the middle of nowhere, they drive by these libraries at midnight and they are sitting in their cars. That's a huge process⋯ we don't really have a way that we can measure how often that is used. But I know we are looking at some of the alternatives. But I would like to get those numbers.

Finally, regarding service to improve the accessibility of public libraries, a facility has recently been pilot-testing a service which allows users to check out library materials as well as to return them. The King County Library System provides a new library service called "Library Express":

> One thing we've done is there is a community in Bredent, that didn't have a library service. The nearest library was 6 or 7 miles away. We partnered with the Homeowners' Association and we opened, what we are calling a "Library Express." It is an unstaffed facility which has secure access. On the door, they scan the library card to access the building, they pick up their holds and use

self check-out, and there is a book drop at this place. It is literally 300 square feet. It's really tiny. It allows that community to have materials delivered real close to their home.

This quote shows the process of operation, collaboration for services, and the size of the facility. As indicated in the above quote, this small size kiosk allows users who are living in an area far from libraries to use library circulation services. In addition, it allows library staff to provide library services to underserved people using a secured place. In this example, the key is the collaboration with the Residential Owners' Association to launch this service. Even though the size of the kiosk is small, several requirements need to be considered for installing it. One requirement is sharing property for this facility:

> Some of our new buildings have drop boxes in more secure environments. We actually have a couple of cities which have talked about this, but nobody wants to give us any space for it. Nobody wants to take a responsibility ⋯ but I think it's something that has always been held out there. Something more like a kiosk ⋯it's a very interesting kind of thing like a Red Box for videos. They actually have that for books.

The basic element of installing the kiosk is space. As the interviewee mentioned, however, nobody wants to share their space with public libraries. Despite the success of the "Library Express" case, lack of collaborative relationships with other facilities

in the community can have a negative effect on library planning. Therefore, establishing relationships with facilities or agencies in the community where libraries are located is the key for libraries in launching new services with respect to enhancement of library accessibility:

Some have a wait⋯ They put it outside the library. Even though they are closed, they put their library card in there. If they told the library to put your hold the books she wants to. In the box in it, disseminate in it ⋯ 2 o'clock in the morning. So we are thinking that⋯ but they cost a lot of money.

5. DISCUSSION

5.1 Spatial Relationships with other facilities

As was analyzed in the section 3.1, libraries are geographically related to other facilities during people's daily activities. The co-location of libraries with other facilities not only allows users to conveniently use libraries in their multi-destination travel setting, but also helps the library to gain more traffic (Blankinship, 2005; Kim, 2006; Singh, 1985). For example, the Glendale branch of the Indianapolis-Marion County Public Library was built in a shopping mall. This partnership with the shopping mall resulted in increased library circulation as well as increased mall traffic (Blankinship, 2005). Kim (2006) showed to

what extent locating a public library in the mall increased the traffic in the shopping mall, which had a low rate of traffic prior to the opening of the library. Therefore, the co-location of libraries with shopping malls can be seen as a win-win strategy. This result is also found in the relationship with groceries and restaurants (Dickson, 2000).

In addition, the interviews with librarians emphasized the partnership between libraries and schools. The librarians also report how public libraries can support school libraries facing budget cuts. Precarious financial circumstances force public libraries to take on the roles of school libraries. Even public libraries that actively collaborate with schools were asked to support school libraries losing staff due to budget cuts.

These relationships suggest there may be benefits in sponsorship and collaboration for library programs. This sponsorship is referred to as "corporate sponsorship", which "allows libraries to enhance the level, extend the range, or improve the quality of library service" (Canadian Library Association, 1997). Holts (2006) argues that "obtaining corporate or business sponsorships for library programs are easier and more rewarding than trying to raise money from folks already up to their elbows in making donations to other non-profit educational and cultural institutions" (p. 35). He provides examples of successful corporate sponsorships, which were designed during the period when he was a former director of St. Louis Public Library; for example, programs for African-American history were sponsored by the Anheuser-Busch company.

The potential of corporate sponsorship was also

identified in an interview:

> This is probabl y the one we have the least support with. They may put a poster up on occasion ··· that's for youth service. Those are much more ones for children··· I get more support and more involvement with them to promote and cross-promote. Our foundation also looks for who in this group will be financially supportive of the library. Knowing this kind of information, [the director] goes and targets people who might come and give money to the library.

As indicated, financial support from other facilities may help to promote both library use and the success of local businesses. However, corporate sponsorship has been criticized, in that this activity violates the role of public libraries as public places (Buschman, 2004; Rosenzweig, 2001). Therefore, librarians must keep in mind several responsibilities of libraries with regard to the development of corporate sponsorship agreements. This is for the goal of adding value to library services without damaging the images of libraries (Canadian Library Association, 1997).

5.2 Impact of Travel Distance on Library Use

Travel distance is a significant factor with respect to geographic characteristics. To reduce the travel distance, public libraries can consider placing drop boxes on the main route. Using book drops, users would not need to go to public libraries that are located away from the route back to home just to drop off checked-out materials. In addition, such a box allows library users to return their checked out materials when the library is closed. Traditionally, drop box services are placed just outside the library building, but on the premises. Even though the benefits of possible library access during closed hours can be achieved using traditional book drops, with respect to the travel distance and accessibility, there is no advantage for users.

Recently, a facility has pilot-tested a service that allows users to check out library materials as well as to return them. The King County Library System provides a new library service called "Library Express." This small size kiosk allows users who are living in the area far from libraries to use library circulation services. In addition, it allows library staff to provide library services to under-served people using a secured place. In this example, the key to launching this service is the collaboration with the Residential Owners Association. Even though the size of the kiosk is small, several requirements need to be considered for installing it. One requirement is sharing property for this facility. Space is the basic element of installing the kiosk. As this interviewee mentioned, however, nobody wants to share their space with public libraries. Despite the success of the "Library Express," relationships with other facilities in the community can have a negative effect on library planning. Therefore, establishing relationships with facilities or agencies in the community where libraries are located is the key for libraries in launching new services with respect to enhance-

ment of library accessibility.

5.3 Transportation Mode Selection

As noted in the section 3.1, cars were the most frequently used transportation mode to reach public libraries. Even though each county has its own bus system, these systems were not sufficient for easy access to libraries. During interviews public librarians commented on the difficulty of access using public bus due to inadequate road networks and bus systems. However, the low rate of public bus usage was a surprise to the librarians. This indicates that librarians are asked to investigate what types of transportation modes are used by their users and what barriers exist in their selection of transportation modes.

Additionally, some interviewees note the walk access of their users, even though library access by walk can be restricted, if pedestrian roads are not well-equipped in a community. Therefore, it would be difficult to draw a conclusion that choices of transportation modes are based only on people's preferences, since "a desired set of alternatives" are not always available (Handy & Niemeier, 1997, p. 1181). If robust road networks and transportation systems are established, the selection of transportation mode by library users might be different from what the findings in this study indicate.

5.4 Temporal Issues for Library Service Planning

As the temporal dimensions of human behavior, this study analyzed time spent on a library visit and included both travel time and in-library time. While findings related to these time dimensions can be easily elicited from the secondary data, library staff have no clear picture of travel time, as discussed in the travel distance section. They more likely have a clear understanding of when their users come to their libraries.

As noted in the section 3.1, regarding library users' activity patterns, for such single-destination trip makers, the hourly time of the highest library use was 7 to 8pm. This time frame indicates that this type of library users would likely go to the library after their dinner. Further analysis of who the library users are reveals that at this 7 to 8 pm hour, library visits were made with household members (21.6%). This finding is supported by one interviewee's comments:

> We have another⋯ that is⋯ I am thinking Mochkeer Library. It's a planned community and it's near all the schools. It's also a bedroom community for people who work for Boeing. So, they are going to the plant and coming home at night and they drive by the library. They are usually picking up their kids.

Since only eight households visited libraries during this time frame, this finding has minimal influence on library planning. However, it is still worthwhile for librarians to pay attention to this travel behavior.

Additionally, people who are library users and workers made daily activities during their lunch hours. From an interview, library programs occurring

during lunch time were identified. A library staff member reported that book discussion groups scheduled to meet during lunch, even though few people participated. Some libraries are not popularly used at lunchtime; as one librarian reported, "Lunch time hours is probably more of our quietest time period." Mothers with children and seniors are the main users at this time period. Since this librarian works for a library located in a predominantly rural area, programs at lunch may not apply to such situations. Therefore, the consideration of lunch programs would be more appropriate in downtown metropolitan areas surrounded by office buildings. The Carnegie Library of Pittsburgh, actually, provides parenting classes during lunch breaks (2009). Through this program, parents of preschoolers and grade schoolers not only meet their needs on parenting skills including communication and social skills, but also can take advantage of these offerings during the workday.

6. Conclusion

This study investigated the librarians' perception on how accessible public libraries are to their users. To answer this question, four research issues including library's spatial relationship with other facilities, distance impact on library access, selection of transportation mode, and temporal dimension of library access were identified as critical factors. These issues were addressed using interviews.

Findings from interviews with seven staff members from the libraries located in the study area support and validate what other research has shown and what library staff has already known from experience. First, in the multi-destination trip setting, the analysis of relationship between libraries and other facilities resulted in defined geographical relationships with these other facilities; in particular, groceries, shopping malls, and restaurants had strong relationships with libraries. Second, users' library visits were mainly made by personal car. Many other patrons often went to library by foot. Third, travel distance and time affects library patrons' access to public libraries. Finally, libraries were visited at different time periods; this being according to users' age and working status.

Based on these findings, several suggestions for improving the accessibility of public libraries were made in this study; for example, libraries should consider lunchtime programs, placing drop boxes on the main access route, developing partnership and sponsorship with facilities having geographically strong relationships with libraries, service planning with consideration given to travel time and distance simultaneously, and active participation and efforts to diminish barriers of library access. Through findings and suggestions from this study, enhancements of library image as well as easy access to libraries by their patrons are expected.

Even though these findings and suggestions were made in library settings in the United States, it is true that applying them to Korean library setting contributes to improve the accessibility of public libraries in Korea.

7. Limitations of Study

This study suffers from several limitations, including some derived from the inherent limitations of interviews. One of the major limitations of interview is the generalizability of findings. Only seven library staff participated in the interview process, and analyzed their perception on the library usage and patterns. Even though at least one library staff was selected from each library system, and they were working at the library service department or as director, seven participants are not a sufficient number to totally represent librarians in the study area. In addition, the findings were based on only one area, the Puget Sound Region, even though this area is sufficiently large, including urban, suburban, and rural areas. The findings could be different in different settings and for different populations.

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