Chapter III. Market Values of Library Services

Introduction

The economic impact of a library is comprised of two distinct types of impacts. The first type is the same as any other organization or business, regardless of its service, goal, or intent. An organization or business that hires individuals and purchases supplies will have a beneficial economic impact on its local community. As described at the end of Chapter II, total statewide economic activity from library salaries, operating expenditures, capital expenditures, and associated purchases by supplier companies and household spending in Texas surpassed $976 million in FY2015.

The second major category of economic impacts/economic benefits is the value of services provided by the public libraries. This chapter enumerates eight types of services, adopts methodologies for capturing benefits, and derives an aggregate monetary value for each. Note that there are a variety of services that some public libraries perform that are not included. For example, some libraries serve as a locale for services provided by outside organizations, for instance private tutors who conduct sessions at a library and business organizations who counsel clients in rooms within a library. Some libraries rent meeting room and auditorium space. These are missing from the calculations.

Reference Services

One of the traditional services provided by libraries is a reference service in which patrons can ask librarians specific questions, and obtain reliable answers in a relatively short period of time. Unlike some other library services, there is no market equivalent for public libraries' reference services. [7] Another problem in valuing reference services is determining the value of an accurate or inaccurate answer. How is it possible to calculate the economic effect of accurate answers for community residents or the costs to a community of having inaccurate answers? And how does one compare the value of accurate answers to different questions—are all questions of the same importance?

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7   While there are many alternatives to library reference services that are free to use, these online mechanisms have a limited history and provide answers of undependable accuracy. See for example: www.google.com, www.yahoo.com, www.ipl.org, answers.yahoo.com, www.ask.com, www.wolframalpha.com, www.answers.com, and www.wikipedia.org. There have been bidding schemes operating at such sites as www.justanswer.com and www.mturk.com .

Without a reasonable market-based option, one method to value a library's reference service is by determining the amount of time librarians spend on patrons' questions and then factoring in compensation for librarians. This method has its own difficulties.[8] In this approach the first step is to characterize reference questions. One major study found that 70.9% of reference questions take between 1-5 minutes to answer, 19.1% take between 6-10 minutes to answer, 7.9% of reference questions take more than 11 minutes to answer, and 2.1% of reference questions take an unknown time to answer.[9]

As with valuing other services in this report, we adopt conservative assumptions whenever such steps are needed. For the large proportion of reference questions, those that take between 1 and 5 minutes to answer, we will use an average of three minutes. For reference questions requiring 6-10 minutes to answer, we will use an average of 8 minutes. For those questions taking *more* than 11 minutes to answer, we will use 11 minutes. And for the small percentage of reference questions requiring an unknown amount of time, we will use the weighted average of the prior three categories (11, 8, 3), rounded down to 7 minutes.[10]

In 2015, Texas public libraries reported that they answered 14,628,965 reference questions. [11]

If we use the percentages from the detailed 1998 study of Spencer and Dorsey, 70.9% would be questions that take between 1 and 5 minutes, or 10,371,936 reference questions. Multiplying that number of reference questions by three minutes and then dividing by sixty minutes per hour, equates to 518,597 hours.

Similar computations were made for the other categories of reference questions, which yielded the following:

> 19.1% were reference questions that require between 6 and 10 minutes, or 2,794,132 reference questions; multiplying by eight minutes and then dividing by sixty minutes per hour, gives 372,551 hours.

8   The problem with an equation based on this premise is that a more experienced librarian capable of answering fifteen questions in an hour will be valued less than a less experienced librarian only capable of answering five questions in an hour. In all cases, simple "directional" questions and "how to" questions about fines, library cards and so forth, are specifically excluded from being counted as reference questions.

9   Spencer, John S. & Dorsey, Luene (1998) Assessing time spent on reference questions at an urban university library. The Journal of Academic Librarianship, 24(4), pp. 290-294.

10   Presumably these times include that time in which library patrons must communicate their inquiry and reference librarians must understand the inquiry/question <u>before</u> being able to research and answer the inquiry.

11   This is an adjusted number that reflects additional (632,479) reference questions from the Pecos and Dallas Public Libraries. Nearly all of those questions were for the Dallas Public Library. The basic procedure was to use the per capita ratio of reference questions to population served for Dallas in 2011 (0.4887) and then use that same ratio for the 2015 population served.

7.9% were reference questions that require 11 minutes or more, or 1,155,688 reference questions; multiplying that number of reference questions by eleven minutes and then dividing by sixty minutes per hour, gives 211,876 hours.

2.1% or 307,208 were of unknown duration and assumed to require an average of 7 minutes to answer; multiplying by seven minutes and then dividing by sixty minutes per hour, yields 35,841 hours.

These different categories of reference questions combine to 1,138,865 hours in 2015. A gross estimate from the 2015 survey is that a library employee on average has an hourly cost (salary and benefits) of $23.83, based on 2080 hours per year. Multiplying the 1,138,865 hours by the hourly rate of $23.83 yields a total value of $27.1 million ($27,141,069) for reference services.

By this method, the average value of a reference question statewide would be approximately $1.86 ($27,141,069 divided by 14,628,965 reference questions).

This value is extremely low compared to other libraries and online library calculators. The current ALA online value calculator estimates the value to be $7.00 per question, [12] while the state of Maine estimates the value at $15.00. [13] In the recent reports, the value from Salt Lake County was $7.24, Santa Clara County was $16.72, and Toronto was the equivalent of $14.11.   Because of the extremely low figure derived by the hourly approach ($1.86), in this instance we believe there is ample justification for using a different value. However, rather than choosing one of the three alternative values, the hourly value will be increased by 50% to $2.79. Using that value per reference question yields a total value of $40,814,812.

Every other possible per unit value would have generated totals in excess of $105 million, and nearly $245 million if the Santa Clara County value had been used. Even those numbers may be low estimates as the per unit values from Salt Lake County, Santa Clara County, and Toronto were from several years ago.

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12   See http://www.ala.org/advocacy/advleg/advocacyuniversity/toolkit/makingthecase/library_calculator
13   http://www.maine.gov/msl/services/calculator.htm

Programs

Programs provided at Texas public libraries are conservatively valued at slightly below $49 million ($48,795,845). Of the 548 public libraries responding to the FY2015 TSLAC annual report, only 11 did not conduct training programs or workshops to their patrons. In 2014-15, public libraries provided 251,258 workshops, training, or other educational programs to more than 6 million library patrons. A majority of these programs, 54%, were provided for children. The programs for children were also more widely attended--71% percent of those who attended any program were children and parents at children's programs.

Programs for young children are focused on instilling a love of books, promoting reading, and frequently involve story-telling or craft projects. Programs for young adults and adults are more varied. While there are book discussion clubs and hobby-oriented programs, many adult programs are devoted to improving an individual's literacy, computer literacy, job skills, or job prospects. And many are oriented to businesses. In the 2012 Bureau of Business Research survey of public libraries, more than 40% of the library directors who responded to a specific question said their libraries provided programs and workshops specifically focused on business-related skills such as:

- preparing/updating a resume and searching for a job;
- developing marketing literature;
- researching issues related to their business; and
- business counseling.

Ideally, we would be able to derive an estimate by reviewing similar types of programs offered by other organizations. Unfortunately, similar types of programs are relatively uncommon. Perhaps the most similar are provided by YMCA and YWCA-type organizations. However, these services are generally provided to members who pay both membership fees and program fees for multiple events, making it difficult to estimate the value of a single-session workshop. Another potential comparison involves museums, as museums often have traveling exhibits and events with a supplemental fee for the exhibit. These fees can be quite expensive but such exhibits rarely are oriented to children per se. The best available estimates for the values of

Texas public library programs, however, are probably those provided by libraries elsewhere. After reviewing such estimates and the online library calculators, a conservative estimate for each type of library program is shown in the third column of Table 3.1. below.

TABLE 3.1. STATEWIDE VALUE OF LIBRARY PROGRAMS IN FY2015

	Number of Patrons	Fee/Value Per Patron	Total Value
Children's Programs	4,315,355	$6.50	$28,049,807
Young Adult Programs	427,754	$9.50*	$ 4,063,663
Adult Programs	1,334,590	$12.50	$16,682,375
Total	**6,077,699**		**$48,795,845**

* This value was determined by being halfway between that of an adult fee and a child fee.

The most recent library studies and calculators have estimated program values ranging from $7 to $42 per patron, per event.[14] Using this methodology the average fee per patron would be $8.03, which is similar to the lower amounts in that range of $7 to $42 in other library reports.

A final note on the value of programs—More than 1,881,000 individuals were trained in the use of electronic resources in 2015. No value has been calculated for this training for two reasons. First, there is likely to be some overlap between this number and the attendance at programs. To include a separate value would effectively be valuing the training twice. Second, it is unknown to what extent there is overlap. Simple correlation values of the training numbers with program attendance by young adults, adults, and total are low, suggesting the overlap may not be substantial. Yet, it is unclear how much overlap there is, and in such an instance, we provide no estimate of a value in keeping with the overall conservative approach used throughout this analysis.

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14   The Salt Lake County library study of July 2013 estimated values of $9 for adults and $7 for young adults and children. Santa Clara County (California) estimated adult and young adult programs at $16 and children's programs at $14. In Toronto's late 2013 report, adult and senior program values were estimated at the US equivalent of $14.11, while the program values for children and teens at the US equivalent of $42.34.

Volunteers

Volunteers in libraries provided their communities with $20 million worth of services ($20,159,826) in FY2015. The vast majority of public libraries in Texas supplement their full- and part-time staffs with volunteers to provide services. In FY2015, more than 1.1 million hours (1,128,138 hours) were donated to Texas' public libraries, providing the volunteers with professional experience and the community with additional services.[15]

Information from the 2015 statewide survey illustrates the importance of volunteer staff for Texas' libraries. All but a handful (15) of libraries utilize volunteers: 20 libraries had the equivalent of 5 or more full-time employees, three libraries had the equivalent of more than 20 full-time employees, and a fourth library had more than 68,000 volunteer hours, the equivalent of 32 full-time employees donated in a year. Ten public libraries are run exclusively by volunteers.

The Financial Accounting Standards Board (FASB) specifies that the value of volunteer services be included in financial statements, grant proposals and annual reports based on the fair market value of those services.[16] To comply with that standard, Independent Sector, a nonprofit support organization, creates an annual report on the average value of volunteer hours by state.[17] In 2015, Independent Sector identified the average value of volunteers for the State of Texas to be $25.11 per hour. [18] (Please see Table 3.2.)

A gross estimate from the 2015 TSLAC survey is that a public library employee on average has an hourly cost (salary and benefits) of $23.83, based on 2080 hours per year. This is a composite of all employees: those who have master's degrees or otherwise hold the title of "Librarian;" administrators, coordinators, conservators, instructors, information technology specialists, clerical staff, and shelving assistants.

Based on the TSLAC Annual Report information, approximately 32% of employees at Texas' public libraries have master's degrees from ALA accredited programs or otherwise hold the title of "Librarian." Other employees include administrators, coordinators, conservators, instructors, information technology specialists, clerical staff, shelving assistants, and many other specialists in larger libraries.[19]

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15   This total was based on the TSLAC survey results and supplemented with 1476 hours, which was the number from 2011 for 15 libraries in 2015 that had missing data for volunteers. This adjustment comprised about 0.13 percent, or slightly more than one-tenth of one percent.
16   FASB Standard No. 116 & 117
17   http://www.independentsector.org/volunteer_time
18   In the past, a unit of Points of Light, HandsOn Network, provided estimates for volunteers specified by job title rather than by state. In 2011 there were three job titles for volunteers in libraries, with hourly compensation ranging from $12.43 per hour to $28.86 per hour. Such information no longer appears to be available.
19   http://www.ala.org/educationcareers/careers/paths/listsupportstaff

TABLE 3.2. POTENTIAL VALUES OF VOLUNTEER HOURS IN FY2015

Independent Sector (2015)	
National average for volunteers	$23.56
Texas average for volunteers	$25.11
Average Salaries/Benefits for FY2015 TSLAC Survey—Average Hourly Rate	**$23.83**

Note: All amounts are salaries and fringe benefits.

Because detailed information about the types of services provided and donated by volunteers in Texas' public libraries are unavailable, one must make assumptions. Volunteers provide a range of services from unskilled labor to specialized assistance, and volunteers have all types of skills and experiences. However, we do not know what proportions of volunteers possess and contribute different skills. If one makes the assumption that volunteers mirror the paid employees, then an hourly rate of $23.83 for volunteers is appropriate. It seems doubtful, however, that the volunteers' duties and responsibilities match those of full-time employees; therefore, a discount of 25% is being applied to the average hourly rate of $23.83, yielding a volunteer hourly rate of $17.87. That is certainly higher than what many library volunteers could command but also lower than what volunteers would receive for operating an entire library and substantially lower than the Texas average hourly compensation for volunteers.

With 1.12 million hours of volunteer services provided to public libraries, with each hour valued at slightly less than $18, volunteers contributed services to their communities valued at approximately $20.16 million.

In-Library Use of Materials

Library patrons not only use computers, electronic databases, wi-fi, and check out books and electronic media in different formats, they read periodicals and other materials inside a library. Identifying the extent of this activity and placing a value on it statewide is challenging. Yet an attempt must be made as value is being provided to users.

Data have been collected regularly about in-library use of materials on the annual, nationwide Public Library Data Surveys (PLDS), even though fewer libraries report data for that metric than for any other library metric. For instance, in the 2013 PLDS (2012 results) there were 473 reporting libraries for in-library use of materials, whereas 1,579 libraries reported data for programs, 1590 libraries reported interlibrary loans, 1,647 libraries reported annual circulation, and 1,262 libraries reported print circulation.

The normal procedure for compiling in-library usage data is "observational counts." Instructions to public libraries by the Ontario Ministry responsible for libraries are as follows:

> *In your typical week survey,…Report the number of materials used inside the library and not checked out. Count any items removed from their usual location by staff or library users. Include reference materials, circulating materials, magazines, newspapers and all other materials used in the library.*
>
> - *Count a vertical file, pamphlet file, multi-media kit or language learning kit as a single item - do not count each as a separate element;*
> - *Do not count audio-visual items unless they were used at viewing/listening stations available in the branch;*
> - *Do not include items returned from an outside circulation[20]*

A number of academic articles have identified limitations of the observational counts.[21] Yet if the alternative is to omit any value for an activity that is known to occur regularly, then it seems preferable to provide at least some estimate of value.

Because the annual TSLAC surveys do not request data on in-library usage, a circuitous method was devised to provide a gross estimate. The first approach reviewed the annual PLDS survey reports and compared the mean and medians for

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20   Ontario Ministry of Culture, Tourism, and Sport, based on personal correspondence with Kimberly Silk, September 2016.

21   See Richard E. Rubin, "Measuring the In-house Use of Materials in Public Libraries," *Public Libraries* 25 (1986) and Rebecca D. Richardson, "The State of In-Library Materials Use at the Cresson Public Library: A Case Study," Current Studies in in Librarianship; Fall2011, Vol. 31 Issue 1.

In-Library Usage and Print Circulation. For 2013 the numbers were:

	Mean	**Median**
In Library	271,500	25,891
Print Circulation	706,751	157,581
Percentage	38.4%	16.4%

For 2011, only the means were calculated in the PLDS data:

	Mean
In Library	309,926
Print Circulation	822,005
Percentage	37.7%

The Toronto Library Report also provided In Library data and Print Circulation data:

In Library	7,141,558
Print Circulation	19,714,304
Percentage	36.2%

The three percentages (mean for the 2013 PLDS, mean for the 2011 PLDS, and mean for Toronto) are quite similar: 38.4%, 37.7%, and 36.2%. Because of the conservative approach, the lowest of the three will be selected: 36.2%. From the latest TSLAC annual survey, print circulation for public libraries was 103,553,860. In-library usage therefore would be a maximum of 37,279,390 (103,553,860 X .362).

Researchers performing the analysis of the Toronto Library utilized a range of unit values: a value without any discount (a high value in their view); a value that was discounted 80% from the high value, and a midpoint value. For In-Library Use, the high value was the same as that for adult circulation (the equivalent of $19.75) and the discounted value was the equivalent of $3.95.

Again, in this report the most conservative choice will be made. Consequently, the 2015 print book circulation value for Texas will first be discounted by 80%. Based on the 2015 print book circulation value of $8.78, the after discount value would be: $1.76 ($8.78 X .20). Then because of potential data issues with determining in-library usage, this value will be further discounted by half. Multiplying the discounted value of $0.88 with the in-library use figure of 37,279,390 generates an estimated value for this activity of $32,805,863.

Computer Terminals and Internet Access

Computer terminals with internet access are a significant economic resource provided by Texas public libraries. Library directors in a statewide survey said patrons used the internet for a wide variety of purposes that ranged from education to employment to basic needs. [22] Some of the online activities specifically mentioned were to:

- perform homework and research for classes from grade school to college;
- take continuing education courses, online training, and webinars;
- train and test for job certifications and licenses;
- search, and apply, for jobs;
- apply for unemployment benefits and social assistance;
- apply for disaster aid as well as find family and friends during and after natural disasters;
- work short-term, paid, online jobs, such as on Mechanical Turk™;
- develop and operate online businesses by placing and receiving orders;
- research price comparisons;
- market new products;
- use online banking; and
- file taxes.

Multiple libraries stressed the value to their patrons of being able to secure, maintain, and update their certifications and licenses by using library internet access. Without internet access, directors said these patrons would lose their jobs. Other library directors reported that without internet access, some patrons would lose their businesses--numerous library directors mentioned that patrons were running small businesses entirely via internet at their library. These businesses ranged from an independent real estate inspector, to a trader in used car parts, to various direct selling members, and other types of businesses.

Directors pointed out that even those patrons who have home internet access often use the library internet access because of its greater bandwidth and faster service. And as one library director commented, not all patrons have the option of having personalized internet access at their residence. Ranchers and others in rural areas in particular have difficulty obtaining reliable and reasonably priced internet at their residences. The same can be said for many disadvantaged individuals in urban areas—while broadband is theoretically available to them in their neighborhood, in practical terms they often lack the resources for an up-to-date computer or broadband access in their residence.

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22   More than 62% of the library directors who responded to the 2012 survey by the Bureau of Business Research said that internet access was "extremely beneficial," while a further 20% said it was "quite beneficial" for their patrons. Furthermore, 56% of library directors statewide reported that internet access was the single most important resource provided by their libraries.

Economic Benefits

Long-term economic benefits to library patrons and the community at large from internet access are difficult to estimate precisely. One approach would be to solicit information from patrons about the value of internet access to them. Because that would entail a large user survey, this report used a different method: examining the cost of obtaining internet access from an alternate source. [23]

While public libraries provide internet access free of charge to their patrons, there are a few companies from which the resource can be purchased.[24] The standard rate set by these for-profit companies is $18-$21 per hour, using a rented computer. (Commercial options do not exist in many smaller communities, or even in some areas of larger metropolitan areas.) Nonetheless, for the purpose of deriving an estimate of the monetary value of internet access via a public library, the commercial rate is the best option.

An elaborate procedure was used in the 2012 report and will not be repeated here. (Please refer to that report for a complete description of the procedure.) Basically, from that procedure we calculated that the average session length was 1.16 hours. Because some libraries did not report a maximum length, we believe the figure of 1.16 hours is very conservative.

Second, we applied the hourly rate of $15 per hour and then computed the average internet session at $17.40 (1.16 hours multiplied by the same hourly rate that was used four years ago, $15.00. [25]

Third, we calculated the statewide estimate, utilizing the total number of internet access sessions, information that was obtained from the 2015 Public Library Annual Report. In calendar year 2014, there were 16,876,575 sessions on internet-accessible computer terminals in public libraries in Texas.[26] At an average value of $17.40 per session, public library computer terminals saved users an estimated $293,652,405 in 2015.

This figure is conservative. As noted earlier, some libraries do not report a maximum length so the average session length in reality is likely to be greater than 1.16

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23   Salt Lake County's report asked about willingness to pay for computer access, and the value was estimated at approximately $80 annually per user. Slightly over one-fourth of patrons in Salt Lake County reported that they used computer terminals at one of the public libraries.

24   The largest business to provide this resource is FedEx Office, which only provides it in a small portion of their store fronts. Many other studies have used this commercial comparison.

25   There is mixed information about the values of computer terminals in other studies. The current ALA calculator is $12/hour. The Toronto and Santa Clara County reports use values less than $10/hour. Salt Lake County uses $18/hour. Because the majority of values are less than the commercial rate of $21/hour, using the prior hourly rate in the 2012 report seems appropriate. A lower rate does not seem reasonable given distance and access issues in Texas compared to library systems in more urban areas.

26   This number was derived after including an estimate in 2014 for the Dallas Public Library, based on their reported usage in prior TSLAC reports and a review of computer usage in seven other large Texas public library systems.

hours. This report also cannot reasonably estimate the values of internet access at public libraries in areas of Texas (largely in the Panhandle, West Texas, and parts of South Texas) without commercial alternatives within a ninety-mile radius. In these situations, users would have a significant commute when they wanted to access the internet, and the value to patrons of having internet access locally would be much higher than $15/hour. Thus the value of internet access statewide is almost certainly underestimated, rather than overestimated.

Wireless Internet Access

Wireless internet is offered by nearly all public libraries in Texas and is a service widely used and considered extremely important by librarians. While somewhat dated, in the 2012 statewide survey of public library directors conducted by the Bureau of Business Research, wireless internet access was listed as the single most important resource provided to their patrons by 13% of the directors.[27]

Library patrons use wireless internet connections for the same purposes as they use the computer terminals within a public library, but wireless provides several advantages. First, it allows patrons to use their own portable computers and digital devices. This enables users to save documents on their own computers as well as keep materials without having to print a hardcopy version. Second, users generally have unrestricted access via wireless, as there is no competition with other users for a computer terminal or limits on the time they have access. Third, users can access a library's wireless service after normal library hours, if they are willing to work within a small distance beyond the walls of their library building. Many examples were cited by library directors of users parking near the library after hours to access wireless (wi-fi) signals.

Although nearly all public libraries offer wi-fi, not all libraries methodically track the number of digital devices accessing their wireless networks. In the 2015 TSLAC annual survey the number of wi-fi sessions was documented at 15,853,077. However, this was the number from only about 73% of public libraries. In other words, more than 140 public libraries did not report data on wi-fi sessions. To provide a more accurate estimate, two different methods were employed. First, a simple proportional approach assumed that if 15.8 million sessions occurred from 73% of the libraries, then if the additional 27% of public libraries had reported, a total of 21.6 million sessions would have occurred. A second approach assumed that the number of wi-fi sessions would be directly proportional to the number of available computers in libraries.[28] In this approach we eliminated those libraries that did not collect wi-fi data and then examined what percentage of the total number of available computers existed, compared to the total number before excluding any of the libraries. That percentage was 76.1%. Because the two methods provided reasonably close percentages (73% and 76.1%) and because the correlation was relatively strong, it is reasonable to assume that actual wi-fi usage is considerably higher than the number provided by librarians in the TSLAC survey. The more conservative percentage of 76.1% would indicate that the actual number of wi-fi sessions in 2015 was 20,831,901 (15,853,077 / 0.761).

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27   An additional 52% of library directors said that internet access in general was the most important resource they provided.

28   A correlation of .75 exists between number of computer terminals and number of wi-fi sessions, a relatively strong relationship. This provides justification for the assumption and also indicates that libraries which do not collect wi-fi data are quite similar to those that do.

Economic Benefits of Wireless Internet Access

As with the earlier section which examined the value of computer terminals and internet access within libraries, we could estimate the monetary value of wireless access by looking at alternative providers. Costs of wireless internet, however, vary from provider to provider and generally involve long-term contracts or are subject to indirect costs, or both. Because of the variety and complexity for alternative providers, in this instance, a more direct approach is appropriate. The Santa Clara County unit value for wi-fi in 2012 was $6 and in Toronto it was the equivalent of $4.70. In the 2012 report we used a unit value of $5, and that seems reasonable for 2015 as well. The unit value is for each use, regardless of the length of that use.

Therefore, the aggregate value of wireless internet access provided by Texas public libraries in 2015 is more than $104 million annually ($104,159,505). This estimate is a straightforward multiplication of $5.00 per use applied to 20,831,901 uses.

Electronic Databases

Increasingly, electronic databases are being used by patrons of Texas public libraries. In FY2015, more than 500 public libraries offered a minimum of TexShare's 62 databases, a co-operative program of TSLAC and local public libraries. Under the TexShare program, patrons have access to databases in the following categories:

Books and Literature—12
Science and Technology—12
Homework—11
General Information—9
Business—7
Genealogy and History—6
Health and Medicine—6
Spanish Language—3
Career Development, Language Learning, Newspapers—1 each

A more detailed description of the databases available for the time period is available at: https://www.tsl.texas.gov/texshare/databasecontractlistfy2015.html

The scope and size of the databases is more apparent in the number of full-text titles available through the TexShare resources:

Newspapers and Newswires	11,080,696
Full text Journals	5,087,966
Primary Source Documents	310,082
EBSCO eBooks	28,281
Reference Books	5,718
Genealogy Documents	2.7 billion

Accessing this wealth of information has become increasingly common. In the FY2015 period, patrons at public libraries performed more than 75 million searches, up dramatically from 9.7 million searches four years earlier.[29] As another perspective, there are more than 200,000 TexShare searches conducted every day by public library patrons, based on vendor data provided to TSLAC.

Because of this large number, it is reasonable to ask if there may be overlap between the number of database searches and other public library services: reference questions, computer usage, and wi-fi sessions. Undoubtedly there is some overlap; the issue is whether it is significant or minimal.

On reference questions, there appears not to be overlap to a great extent. According to a researcher at the TSLAC, *"...Reference transactions are generally face-to-face interactions between library staff and patrons, and the libraries track those numbers and then report them to us."* In many cases, electronic databases are used by patrons

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[29]   There were approximately 10% fewer sessions, roughly 68 million, in contrast to the number of searches, 75 million. The number of searches will be the unit of analysis in this description.

in lieu of asking reference librarians specific queries, as well as for conducting searches and research that patrons know cannot be performed by librarians.

Yet, there is certainly some overlap with computer usage and wi-fi usage by patrons. At present there is no good method for determining the extent of this overlap. And for this reason, again, we will adopt a conservative approach and conservative assumptions to valuing this service.

In the other recent reports about library impacts, a fairly consistent value has been used for database searches:

ALA Calculator:	$19.95
Toronto (US equivalent):	$23.52
Salt Lake County:	$20.00
Santa Clara County (CA):	$37.40[30]

There are multiple reasons, however, for adopting a lower value than those used in other studies. First, there is some overlap of this service with computer usage and wi-fi. How much is unknown, and there is no current way of identifying the extent. Second, TSLAC acknowledges that there is some uncertainty about the data, given the available tracking technologies of the vendors. Also there are some known cases of particular library systems showing dramatically large increases in monthly search numbers. Finally, per capita search metrics for Texas appear much higher than other jurisdictions. While the content of the database packages may be quite different, this is another possible reason to err on the conservative side.

For these reasons, a very conservative value per search of $2 was selected. Based on this per search unit value, the total value of database searches in public libraries was $150,167,176 in FY2015.[31]

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30 Different classes of database searches were valued differently, ranging from $5 each for foreign language and indexes/directories, to $25 each for most categories, and at $200 each for company/business information. Dividing the total value of all searches by the total number of searches yielded $37.40 for the mean.

31 According to TSLAC, if each public library would have purchased the same package of 62 databases, the total cost would have been at least 10 times more than that in the absence of the group discount.

Circulation of Materials

To derive the value of circulation materials provided by Texas public libraries requires several different data sources, information about circulation materials (books, DVDs, e-books etc.) and a few reasonable assumptions. First, books will be considered, then other materials, and finally total values will be computed for circulation transactions by public library patrons.

For books, in the prior study, a complicated, multi-step process was performed. The first step was to determine the proportion of new book purchases, by category. Then one category, Higher-Education, Professional, and Scholarly, of books was deleted as that category is rarely purchased by public libraries. The re-computed proportions for several categories were then compared against actual circulation proportions for public libraries in Texas. The comparisons showed some differences, but within reasonable approximations. Then we determined the average cost of a new hardcover book in each category. We then multiplied that average cost by the proportion of new book purchases by proportion of new book purchases by category to determine the average new book cost. Then that price was severely discounted (80%) for a variety of reasons, to arrive at a per book circulation value of $8.63.

In retrospect, that complicated process seems unnecessary, and for FY2015, a less complicated approach will be used. As can be seen in Table 3.3 below, a variety of values have been identified in recent analyses. (Blanks indicate no value was assigned to that category.)

TABLE 3.3. POTENTIAL VALUES OF BOOKS, BASED ON OTHER SOURCES

	ALA Calculator	State of Maine	State of Minnesota	Santa Clara County*	Salt Lake County	City of Toronto**
	2015	2014	2010	FY 2012	2013	2013
Adult Books	17	18	7.48	9.5	8.61	7.04
Young Adult Books	12		6.48			6.10
Children's Books	17	10	6.48	8.75	4.81	6.10

Average of Low/High
**Discounted 50%*

Because of the variation, one approach is to exclude the highest and lowest values for adult books and children's books, and then take the mean or average. That would provide the resulting values in Table 3.4.

TABLE 3.4. DERIVED VALUES OF BOOKS, BASED ON OTHER SOURCES

	ALA Calculator	State of ME	State of MN	Santa Clara Co.*	Salt Lake County	City of Toronto**	Average
	2015	**2014**	**2010**	**FY 2012**	**2013**	**2013**	
Adult Books	17		7.48	9.5	8.61		$10.65
Young Adult Books	12		6.48			6.10	$8.19
Children's Books		10	6.48	8.75		6.10	$7.83

Average of Low/High

**Discounted 50%*

Because the 2015 TSLAC survey does not differentiate between young adult books and adult books, a blended rate of $9.42 will be used.

There were a total of slightly more than 103 million book items in physical format circulated in FY2015. Of that number, approximately 40% were items marked as children's and 60% as adult or young adult. Therefore, the value of book circulation transactions:

Children	41,486,566 X $7.83 = $324,839,812
Adult/Young Adult	62,067,294 X $9.42 = $584,673,909
Total Book Circulation Value:	$909,513,721

Non-book, that is digital fomat, circulation values follow a somewhat different approach. Non-book items can be divided into two main categories:

Video and audio items: 51.6%,
E-books: 48.4%.[32]

DVDs are available as a single purchase item from one company (RedBox) at many locations in Texas and could be rented for $1.50 per day in FY2015. Alternative sources for multiple rentals are NetFlix, Amazon, and several smaller services. A per unit value of $1.50 will be used for both DVDs and CDs.

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32   Because circulation data does not distinguish between audio and video items, these percentages were based on the classification of items in the collections. In terms of actual circulation, it is reasonable to assume that e-books comprise a higher proportion than video and audio formats.

E-books are a different matter. Other library valuation research present values that vary considerably both in absolute terms and in relation to the value of a book in physical format. And there are choices available online from free e-books up to and including e-books of new releases at $14.99. While many cost below $10, there is also data that a higher per-unit value should be used for e-books: the average per volume price for more than 232,000 e-books in 2013 was $27.83.[33] Without choosing a large sample of genres, authors, etc. and deriving a blended per unit value, any choice of value will be somewhat subjective. For this report, we see no reason to value e-books differently than a hardcopy format.

Based on circulation data from the 2015 public library survey, the statewide calculations for digital formats are:

    Video and audio items: 5,424,113 X $1.50 = $8,136,170
    E-books: 5,091,087 X $8.78 = $44,699,744

And the value for all circulation transactions are:

    Total Value of Book Circulation Transactions: $909,513,721
    Total Value of Digital Circulation Transactions: $52,835,914
    Total Value of Circulation Transactions in FY2015: $962,349,635

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33   See Catherine Barr and Constance Harbison, "Book Title Output and Average Prices: 2009-2013," in Library and Book Trade Almanac (formerly The Bowker Annual), 2014, 59th Edition, Information Today, Inc.: Medford, NJ., page 473.