

APPENDIX C

Ohio's Public Library System Compared to Public Libraries in Other States

Driscoll & Fleeter

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Overview

The current budget difficulties in Ohio have required the State and its local governments to re-examine programs and priorities. One focus of such an examination must address the extent to which governments maximize efficiency in the delivery of public services. However, such an examination cannot occur in the abstract without consideration for the quality of the services actually delivered. Ohio's public library system not only provides the state's residents with the highest quality of services, but the implementation of library programs takes advantage of many opportunities to make available more and better information in cost effective ways.

Ohio currently has 251 library districts. These districts vary in size from very small libraries serving populations of 5,000 or fewer residents to the Public Library of Cincinnati and Hamilton County with its county-wide territory consisting of more than 851,000 residents. Thirty-four of the state's counties have county-wide library districts.

As with other forms of public services, public libraries must adjust to the geographic circumstances of the service territory to which they deliver services. Service territories in urban counties have higher density and relatively more persons per library district than service territories in rural areas where greater dispersion of population tends to mean fewer persons per district. Nevertheless, some of the reasons for library districts of different size in Ohio originate from historical developments rather than due to conscious decisions about the optimum number of library districts.

The issue of library efficiency does not turn simply upon the organization of library districts as governmental units. An entirely different efficiency issue involves the availability of library facilities regardless of the organization of the library district through which the facilities are provided. In 2009, Ohio had 729 library facilities. In this context, a "library facility" means a place open to the public with access to books, magazines, and other information resources. This is equivalent to the common meaning of the term "public library." The distribution of these facilities throughout the state depends on a combination of population size and geographic area. Only four counties have a single library facility (Gallia, Monroe, Noble, and Vinton). These are among the counties in Ohio with the smallest population.

This analysis compares Ohio's library system with the library systems in other states. The comparison shows that Ohio libraries have among the highest usage rates of libraries in all fifty states. While Ohio has a high volume of library transactions, the cost per transaction remains well below the national average. In addition, the average size of the population in Ohio library districts exceeds the national average population of library districts by about 40%.

Source of Data

Data in this report came from the annual statistics reported by the Institute of Museum and Library Services, an agency of the federal government. Federal law charges the Institute to publish ongoing analyses of museum and library services. The Institute works collaboratively with State Libraries to develop annual statistical reports. The most recent report published in 2010 provides statistical data for 2008.

I. State-by-State Comparisons of Library Services and Expenditures

Ohio spends more per capita on libraries than any other state. While the District of Columbia spends more per capita on library services, it does not appear comparable to the other states on this measure of public finance, and it is not included in any of the comparisons in this paper.

Table 1 shows the ten states with the highest per capita expenditures for public library services. The table shows that Ohio's library expenditures per capita led all states in 2008, the most recent year for which complete comparisons for other states are available. These data do not reflect the effects of the recent recession. Ohio libraries experienced significant reductions in distributions from the State's Public Library Fund (PLF) from \$451 million in calendar year 2008 to around \$370 million in calendar year 2010. A sharp increase in ballot initiatives for local property taxes to support Ohio libraries also occurred during this period. Since the recession occurred throughout the country, reductions in funding for libraries after 2008 may have also occurred in other states to a comparable degree as in Ohio.

Table 1: Library Expenditures Per Capita of Ranked by the Ten States with Highest Per Capita Expenditures - 2008

Rank	State	Library Expenditures Per Capita
1	Ohio	\$62.77
2	New York	\$57.78
3	New Jersey	\$54.94
4	Wyoming	\$52.92
5	Connecticut	\$51.69
6	Washington	\$51.22
7	Illinois	\$50.56
8	Maryland	\$46.99
9	Indiana	\$46.75
10	Colorado	\$46.04
	US Average	\$35.33

Total expenditures per capita provide a measure of the cost of libraries in Ohio, but they provide no indication of the efficiency of those services. The most important measure of efficiency shows the results of Ohio's expenditures on libraries. Do Ohioans receive good value for the additional expenditure per capita?

Fortunately, libraries collect detailed statistics about their operations. These data make comparisons of library services on reasonably standardized performance measures possible.

The first measure of library value results from the most basic indicator of public use. Table 2 shows the top states in terms of the relationship between registered borrowers and state population. A "registered borrower" means a person who has acquired a library card. Only one state, Minnesota at 76.5%, shows a higher usage rate of its public libraries when measured by the percentage of state residents who register for a library card. A comparison of Ohio's library registration rate of 70.6% to nearby states with similar patterns of urbanization shows a clear advantage in terms of residents' use of Ohio libraries. New York (59%), Illinois (42%), Pennsylvania (46%), and Michigan (52%), and New Jersey (53%) show much lower percentages of library card registration compared to Ohio. Three of those states - New York, New Jersey, and Illinois - also appear among the states with the highest per capita expenditures.

The high registration percentage in Ohio indicates that the residents of the state have determined that its libraries deliver valuable services.

Table 2: Registered Borrowers at Public Libraries as a Percentage of State Population in the States Ranked to Show the Highest Ten States - 2008

Rank	State	State Population	Registered Borrowers	Percentage of Borrowers
1	Minnesota	5,263,493	4,024,748	76.5%
2	Ohio	11,511,499	8,124,502	70.6%
3	Hawaii	1,283,388	874,876	68.2%
4	Iowa	3,002,555	2,011,961	67.0%
5	Washington	6,587,600	4,389,115	66.6%
6	Wyoming	522,830	346,288	66.2%
7	Kansas	2,775,997	1,830,271	65.9%
8	Utah	2,615,868	1,713,470	65.5%
9	Wisconsin	5,674,228	3,672,668	64.7%
10	Indiana	6,080,485	3,907,867	64.3%
	US Total	302,275,668	166,588,117	55.1%

Table 3 shows that Ohioans do not simply register to use the state's libraries, they also use them at an extraordinary rate. Normally, state-by-state comparisons of data use a per capita measure to control for the effects of high or low levels of population. The per capita measure places the states on a more comparable basis by eliminating the influence of the state's size on a comparison. Table 3 departs from this practice because the raw data, uncontrolled for population size, show how heavily Ohioans use Ohio libraries in absolute terms.

Table 3: Statistics of Library Usage Ranked for the Top Ten States - 2008

Rank	State	Reference	Circulation	Program Attendance	Internet Terminal Users	Total Library Use Transactions
1	California	32,546,202	220,108,302	7,363,498	38,421,303	298,439,305
2	Ohio	20,917,373	192,318,732	5,671,422	22,696,254	241,603,781
3	New York	28,035,402	155,219,600	6,827,978	22,965,935	213,048,915
4	Florida	29,434,932	115,644,316	4,263,196	21,754,019	171,096,463
5	Texas	15,813,368	109,274,296	4,643,068	20,390,892	150,121,624
6	Illinois	14,063,708	105,342,297	3,442,450	16,328,937	139,177,392
7	Michigan	8,973,512	79,292,940	2,572,044	12,925,392	103,763,888
8	Indiana	5,594,034	78,211,299	2,808,031	10,110,283	96,723,647
9	Washington	6,523,904	78,346,460	1,659,601	9,189,636	95,719,601
10	Pennsylvania	8,382,827	69,760,260	3,827,228	8,856,727	90,827,042

The four middle columns of the table show different kind of library services. "Reference" measures the number of inquiries for information made to library reference departments. "Circulation" reports the number of books, films, tapes, and other materials borrowed from a library by its patrons. "Program attendance" indicates the number of persons who attended programs offered to the public at public libraries. "Internet Terminal Users" shows the number of persons who used public computer terminals at the library for online use. The total column shows the sum of the preceding four columns.

Table 3 shows that Ohio ranks *second* in total library usage in absolute terms. New York, Florida, Texas, Illinois, and Pennsylvania all have higher populations than Ohio, but the data clearly shows that none of these states come close to Ohio on this cumulative measure of library use. Ohioans' greater utilization of library services is most clearly shown in the library circulation data shown in Table 3.

Table 4 takes the data developed for use in the preceding table and expresses total library usage (as shown in the total column on Table 3) in terms of each state's population. This per capita perspective shows that Ohio libraries far exceed every other state when the comparison focuses on how much Ohioans use their libraries compared to residents of other states.

Table 4: Ranking of Library Usage by Transactions Per Capita - 2008

Rank	State	Total Library Usage (from Table 3)	Library Use Transactions Per Capita
1	Ohio	241,603,781	20.99
2	Utah	43,122,943	16.49
3	Oregon	59,654,722	15.93
4	Indiana	96,723,647	15.91
5	Colorado	74,057,960	15.05
6	Washington	95,719,601	14.53
7	Wisconsin	76,407,538	13.47
8	Minnesota	68,606,863	13.03
9	Connecticut	45,200,899	12.87
10	Wyoming	6,615,838	12.65
	US Total or Average	3,013,351,878	9.97

Table 5 shows the same data as in Table 4, but, instead of the top ten states in terms of library transactions per capita, the table shows the library usage in the ten largest states by population. This perspective confirms Ohio's status as the nation's premier provider of library services.

Some states on Table 4 manage to achieve their library usage per capita ranking because they have relatively small and homogenous populations. None of the other states in Table 4 displays the degree of urbanization in Ohio. Table 5 shows a comparison between Ohio and the other nine most populous states. Generally, the comparison states in Table 5 resemble Ohio's higher level of urbanization and ethnic diversity.

Seven of these states fail to achieve even one-half of the library usage recorded in Ohio. Compared to the two closest states on Table 5, Ohio had 86% more library usage than New York and 95% more than Illinois.

Table 5: Top Ten States in Total Population Ranked by Library Use Per Capita - 2008

Rank	State	State Population	Total Library Usage (from Table 3)	Library Use Transactions Per Capita
1	Ohio	11,511,499	241,603,781	20.99
2	New York	18,927,889	213,048,915	11.26
3	Illinois	12,901,563	139,177,392	10.79
4	Michigan	9,952,969	103,763,888	10.43
5	Florida	18,807,219	171,096,463	9.1
6	North Carolina	9,069,398	76,985,578	8.49
7	California	38,049,462	298,439,305	7.84
8	Pennsylvania	12,284,183	90,827,042	7.39
9	Georgia	9,319,532	68,814,887	7.38
10	Texas	23,904,308	150,121,624	6.28
	US Total or Average	302,275,668	3,013,351,878	9.97

Of course Table 1 showed that Ohio spends more per capita for library services than any other state, so one might reasonably expect a high level of library service provision. Table 6 shows that in terms of expenditure per transaction, Ohio delivers its large number of library use opportunities for a comparatively low cost.

Table 6: Public Library Expenditure Per Usage Transaction - Top Ten States in Cost per Transaction, Plus Ohio and U.S. Average - 2008

Rank	State	Total Library Usage (from Table 3)	Total Expenditure for Public Libraries	Expenditure Per Usage Transaction
1	New Jersey	83,946,707	\$462,301,838	\$5.51
2	Alaska	5,897,416	\$30,974,785	\$5.25
3	New York	213,048,915	\$1,093,576,294	\$5.13
4	Louisiana	30,282,385	\$142,641,967	\$4.71
5	Illinois	139,177,392	\$652,291,626	\$4.69
6	Rhode Island	10,136,673	\$45,008,046	\$4.44
7	California	298,439,305	\$1,256,910,139	\$4.21
8	Wyoming	6,615,838	\$27,667,707	\$4.18
9	Connecticut	45,200,899	\$181,472,866	\$4.01
10	Hawaii	8,621,107	\$33,754,619	\$3.92
31	Ohio	241,603,781	\$722,628,361	\$2.99
	US Total	3,013,351,878	\$10,678,990,732	\$3.54

Table 6 divides the number of public library usage transactions by state as computed for Table 3 into the total amount expenditures by public libraries in that state. The result provides a cost per library transaction. By this measure, Ohio ranks 31st in cost per transaction among the 50 states.

Table 7 shows the per usage expenditures in the ten states with the largest number of library usage transactions.

Table 7: Ten States With the Most Library Usage and Their Library Expenditure per Transaction - 2008

Rank	State	Total Library Usage (from Table 3)	Total Expenditure for Public Libraries	Expenditure Per Usage Transaction	Population
1	New York	213,048,915	\$1,093,576,294	\$5.13	18,927,889
2	Illinois	139,177,392	\$652,291,626	\$4.69	12,901,563
3	California	298,439,305	\$1,256,910,139	\$4.21	38,049,462
4	Pennsylvania	90,827,042	\$339,344,478	\$3.74	12,284,183
5	Michigan	103,763,888	\$383,410,747	\$3.70	9,952,969
6	Washington	95,719,601	\$337,394,110	\$3.52	6,587,600
7	Florida	171,096,463	\$573,669,323	\$3.35	18,807,219
8	Ohio	241,603,781	\$722,628,361	\$2.99	11,511,499
9	Indiana	96,723,647	\$284,288,947	\$2.94	6,080,485
10	Texas	150,121,624	\$438,040,463	\$2.92	23,904,308
	US Total	3,013,351,878	\$10,678,990,732	\$3.54	

Table 7 uses the library expenditure data computed in the same manner as Table 6. However, it shows the states with the most library usage activity, as set forth on Table 3. Ohio ranks eighth of these ten states in terms of library cost per transaction.

Table 8 shows library transactions and expenditures in the ten largest states by population. Again, Ohio's cost per library transaction appears among the lowest of the large states, even as Ohio delivers far more services in absolute terms than any large state except California.

Table 8: Ten Largest States Ranked by Population and their Library Expenditure per Transaction - 2008

Rank	State	Total Library Usage (from Table 3)	Total Expenditure for Public Libraries	Expenditure Per Usage Transaction	Population
1	New York	213,048,915	\$1,093,576,294	\$5.13	18,927,889
2	Illinois	139,177,392	\$652,291,626	\$4.69	12,901,563
3	California	298,439,305	\$1,256,910,139	\$4.21	38,049,462
4	Pennsylvania	90,827,042	\$339,344,478	\$3.74	12,284,183
5	Michigan	103,763,888	\$383,410,747	\$3.70	9,952,969
6	Florida	171,096,463	\$573,669,323	\$3.35	18,807,219
7	Ohio	241,603,781	\$722,628,361	\$2.99	11,511,499
8	Georgia	68,814,887	\$202,223,543	\$2.94	9,319,532
9	Texas	150,121,624	\$438,040,463	\$2.92	23,904,308
10	North Carolina	76,985,578	\$200,625,307	\$2.61	9,069,398
	US Total	3,013,351,878	\$10,678,990,732	\$3.54	

Tables 6, 7, and 8 show that Ohio has low costs per service transaction compared to comparable states. These tables focus on four aspects of library use based on measures with comparable scales. Two other measures of the cost of library performance include the cost to maintain a place where patrons can access library materials at a library facility and the cost to provide access to databases with electronic information. The latter service may or may not require an actual visit by a patron to a library facility.

Table 9 shows that Ohio has the third largest number of library visits among the states. Ohio's cost per library visit ranked the state ninth nationally on that measure.

Table 9: States Ranked According to Number of Library Visits with Cost Per Visit- 2008

Rank	State	Library Visits	Total Expenditures	Cost Per Visit	Total Library Usage (from Table 3)	Expenditure Per Usage Transaction
1	California	171,873,378	\$1,256,910,139	\$7.31	298,439,305	\$4.21
2	New York	117,214,130	\$1,093,576,294	\$9.33	213,048,915	\$5.13
3	Ohio	92,279,510	\$722,628,361	\$7.83	241,603,781	\$2.99
4	Florida	84,363,237	\$573,669,323	\$6.80	171,096,463	\$3.35
5	Illinois	77,552,921	\$652,291,626	\$8.41	139,177,392	\$4.69
6	Texas	74,220,681	\$438,040,463	\$5.90	150,121,624	\$2.92
7	Michigan	54,390,124	\$383,410,747	\$7.05	103,763,888	\$3.70
8	New Jersey	49,288,639	\$462,301,838	\$9.38	83,946,707	\$5.51
9	Pennsylvania	48,315,144	\$339,344,478	\$7.02	90,827,042	\$3.74
10	Washington	42,271,449	\$337,394,110	\$7.98	95,719,601	\$3.52
	US	1,502,156,525	\$10,678,990,732	\$7.11	3,013,351,878	\$3.54

Libraries provide two different kinds of online access. First, they offer terminals through which patrons can connect to free Internet material. That kind of access is included in the library use data. This paper incorporated the service by which libraries provide Internet access as measured by the number of persons who use Internet terminals at libraries. That data was included as one of the four transaction types used to measure total library usage in Tables 3 through 9.

Second, as libraries have moved into the electronic age, they have added a new service to the list of traditional library activities. Libraries in all states purchase access to proprietary databases. These databases offer electronically stored books, magazines, journal articles, and other information resources for a price. Access to the online archive of New York Times newspapers is one example of a proprietary database. Libraries purchase the right to access such materials and make them available to library patrons at no charge to the patron. The cost for an individual to subscribe to such services on their own would be prohibitive. However, the cost becomes manageable when libraries subscribe and make these electronic collections available to patrons as a package. The use of some electronic databases must occur at a library facility through library terminals. Patrons can access other such databases at home or at any other location with an Internet connection simply by providing a valid library card identification number at login.

National library data do not yet collect user information about the number of patrons who access such databases. Also, national data do not yet contain a measure of the quantity of such usage by library patrons.

Therefore, the library usage data can account for one aspect of new electronic library services in the form of access to Internet terminals. However, the data collection system has not caught up with technological advances in the form of statistical data about proprietary database usage by library patrons. The additional service of providing access to proprietary databases has both cost and a benefit. The cost is included in total library expenditures and averaged over the four measurable kinds of library use: reference transactions, circulation, program attendance, and Internet terminal use. The inability to capture the benefit provided by proprietary database access means that Tables 3 through 9 incorporate the total cost of library services in Ohio, but they understate the amount of benefit provided because a proper quantification of the proprietary database benefit is not available in the library use data.

The inability to account for this additional benefit provided by Ohio public libraries would not make much difference if Ohio provided about the same level of proprietary database services as other states. However, as Table 10 shows, Ohio has embraced new opportunities in electronic information resources to a far greater extent than any other state.

Table 10: States Ranked According to the Number of Proprietary Databases Offered to Patrons by Public Libraries - 2008

Rank	State	Number of Proprietary Electronic Databases
1	Ohio	79,758
2	Texas	29,066
3	New York	23,598
4	Pennsylvania	23,295
5	Alabama	17,390
6	Illinois	14,659
7	Massachusetts	14,078
8	Maine	13,595
9	Wisconsin	13,513
10	Indiana	10,581

Table 10 shows the ten states with the largest number of proprietary electronic databases. With nearly 80,000 such databases, Ohio has more than twice the number of databases of the next state on the list. Since Table 7's computation of a per transaction cost already includes the cost of purchasing electronic database subscriptions, the benefits of the electronic database as reflected in the statistics shown on Table 10 do not require recognition of an additional cost factor beyond the costs already developed and measured in Tables 3 through 9.

Thus, Tables 3 through 9 understate the efficiency of Ohio libraries because they fully capture the costs of library services, but they lack a data measure adequate to show the benefit of a cutting edge type of

library service in which Ohio leads the nation. Ohio competes very effectively on the traditional measures of library service, *and* it still manages to deliver far more of the most advanced services than any other state.

To summarize, Ohio registers the highest number of per capita library transactions of any state. It achieves that status at a per transaction cost that ranks 31st and below the national average. As an alternative measurement, the state's public libraries register the third highest number of patron visits compared to all other states at a per visit cost that ranks Ohio ninth and somewhat above the national average. Having accounted for *all* of its expenditures under either of these two measures of per usage transaction or per visit cost, Ohio offers the additional value added measure of cutting edge information technology at a level twice that of any other state and several times that of other large states. In effect, these additional electronic benefits occur without additional cost because the other measures have accounted for all costs already.

II. State-by-State Comparison of Average Library Size

Apart from the efficient delivery of library services, a separate issue concerns the efficiency of library organization. Could fewer library districts deliver the same services at an even lesser cost? The answer to such a question would require a detailed analysis of the budgets of individual library districts. However, it is possible to examine general data to determine whether Ohio has an unusual number of library districts relative to its population.

Table 11: States' Library Districts Ranked from Smallest to Largest in Terms of Population Per Library District - 2008

Rank	State	Number of Library Districts	Estimated 2008 State Population	Population Per District
1	Vermont	183	621,000	3,393
2	Maine	272	1,315,000	4,835
3	Iowa	539	3,003,000	5,571
4	New Hampshire	231	1,315,000	5,693
5	Nebraska	270	1,775,000	6,574
6	South Dakota	114	804,000	7,053
7	Alaska	86	680,000	7,907
8	North Dakota	81	641,000	7,914
9	Kansas	327	2,776,000	8,489
10	Montana	80	900,000	11,250
36	Ohio	251	11,511,000	45,861
	US Average	9,220	302,273,000	32,784

Table 11 shows that Ohio ranks 36th in average library district size from smallest to largest. Compared to the national average, Ohio has about 13,000 more residents per library district. The measure used here is an average obtained by dividing the number of library districts in each state into that state's population. A large number of Ohio library districts fall below the state's per district average. Nevertheless, the table does show that Ohio does not have unusually small library districts compared to other states. On average, the size of Ohio library districts measured by population exceeds the average library district in the U.S. by about 40%.

Table 12: Top Ten States Ranked in Total Library Usage and Population Per Library District in Those States Ranked from Smallest to Largest Average Population Per District - 2008

Rank	State	Population Per Library District	Total Library Use Transactions
1	Illinois	20,350	139,177,392
2	New York	25,070	213,048,915
3	Indiana	25,546	96,723,647
4	Michigan	25,919	103,763,888
5	Pennsylvania	26,880	90,827,042
6	Texas	42,610	150,121,624
7	Ohio	45,861	241,603,781
8	Washington	102,938	95,719,601
9	California	210,215	298,439,305
10	Florida	235,088	171,096,463

Table 12 draws the upon the measure of library usage shown in Table 3 to relate the states with the highest number of library transactions to the average size of library districts in those states. Ohio ranks seventh by this measure. Six of the ten states with the highest amount of library use have smaller library districts than Ohio.

Table 13: Top Ten States in Total Library Usage Per Capita and Population Per Library District in Those States Ranked from Smallest to Largest Average Population Per District - 2008

Rank	State	Population Per Library District	Total Library Use Transactions Per Capita
1	Wisconsin	14,892	13.47
2	Connecticut	18,005	12.87
3	Wyoming	22,739	12.65
4	Indiana	25,546	15.91
5	Oregon	29,722	15.93
6	Utah	37,913	16.49
7	Minnesota	38,138	13.03
8	Colorado	42,783	15.05
9	Ohio	45,861	20.99
10	Washington	102,938	14.53

Table 13 takes the top ten states in library use per capita as shown on Table 4. It relates these top library usage states to the number of persons per library district. Only one state, Washington, averages larger library districts than Ohio. The other eight highly ranked states in per capita library use have smaller library districts than Ohio.

Conclusion

No perfect method exists to quantify library services in a comprehensive way. However, the combination of four major measures of library usage places Ohio as the second highest state in the absolute quantity of library activities in the form of reference transactions, circulation, program attendance, and Internet terminal usage. Only California with more than three times Ohio's population exceeds Ohio in absolute usage of these library services. Adjustment of library usage data by population size places Ohio as the number one state in per capita library service provision by a large margin.

While no specific measure of library quality exists, the quantity of library usage should offer some measure of quality as well. To the extent that library patrons can vote with their feet, Ohio libraries registered more visits per capita than any other state. Ohioans visited their libraries at a rate of eight times per year when no other state registered as many as seven visits per year.

Measurement of the cost of libraries per use measured by circulation, program attendance, and Internet terminal users shows that Ohio's per use cost ranks the state as 31st. This cost measure does not account for the state's position as the leader in cutting edge distribution of electronic database technology. Because the usage measures provide no method for incorporating the benefits of electronic database subscriptions, the per usage measures short-change Ohio by omitting that aspect of library services in which Ohio shows the most dominance. Thus, Ohioans get all of the benefits shown in

terms of visits, reference services, circulation, program attendance, and Internet terminal use at a very competitive cost, and, on top of those benefits, a whole new dimension of library services through access to proprietary online databases at no extra cost beyond those already accounted for.

While Ohio has 251 library districts of which many are relatively small, the state's overall average library size does not set it apart as an area with an excessive number of library districts relative to the state's population. Thirty-five states have smaller average library districts measured by each state's population divided by the number of library districts in that state.