

The Return on Investment of Ohio's Public Libraries & A Comparison with Other States

Prepared for the Ohio Library Council

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Overview

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 Columbus Metropolitan Library with its nearly countywide territory consisting of more than 850,000 residents. Ohio's public libraries provide a wide array of services, ranging from the circulation of materials (books, videos, music in both physical and electronic format), to reference services, computer terminal and database access, library programming, and meeting space.

In Ohio, public libraries have a very different governance structure from public libraries in other states. Ohio public libraries are separate and independent political subdivisions of their appointing authorities. This means that they have a separate legal existence. They do not directly answer to their appointing authorities. This contrasts with the situation in some other states, where libraries are simply a department or a function of another unit of government. Therefore, public libraries in Ohio have the ability to both raise local revenues through property tax levies (subject to voter approval) and also to advocate for funding directly with the Ohio General Assembly, rather than going through city council, the school board, or the county commission.

The first two sections of this analysis compare Ohio's library system costs and extent of services with that of library systems in other states. From the standpoint of this report it is fortunate that libraries routinely collect and report detailed statistics about their operations. This data makes comparisons of library services on reasonably standardized performance measures possible. The national comparison shows that Ohio libraries have among the highest usage rates of libraries in all fifty states. Ohio has not only a very high volume of library transactions, but the cost per transaction in Ohio remains well below the national average.

The data analyzed in the first two sections of this report came from the annual statistics reported by the Institute of Museum and Library Services (IMLS), 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 available on the IMLS website provides statistical data for 2019.

The third section of his report computes the statewide Return on Investment (ROI) derived by Ohio residents from usage of the state's public libraries. The most recent data available for this analysis is from 2019. Together the analysis in this report comprises a

comprehensive and convincing assessment of the value provided by Ohio’s system of public libraries.

I. State-by-State Comparisons of Library Services & Usage

The first section of this report provides comparisons of the services provided and utilized by Ohio’s public library system as compared to those provided and utilized in the rest of the country.

The first measure of library service results from the most basic indicator of public use: the number of registered borrowers. Table 1 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. Table 1 shows that Ohio’s 2019 percentage of residents who are registered borrowers is 73.7%. Table 1 shows that Ohio has the highest public library usage rate in the U.S. as measured by the percentage of state residents who register for a library card. *The fact that nearly 3 out of every 4 Ohio residents is a registered borrower is a clear indication that Ohio’s populace considers the state’s libraries to deliver valuable services.*

In addition, a comparison of Ohio's library card registration rate of 73.7% to nearby states with similar patterns of urbanization shows a clear advantage in terms of Ohio residents' use of public libraries. New York (58.3%), New Jersey (46.9%), Michigan (43.8%), Pennsylvania (42.3%) and Illinois (36.5%), show much lower percentages of library card registration compared to Ohio.

Table 1: 2019 Registered Borrowers at Public Libraries as a Percentage of State Population in the States Ranked to Show the Highest Ten States

2019 Rank	State	2019 State Population (Estimated)	2019 # of Registered Borrowers	2019 Percentage of Borrowers
1	Ohio	11,502,271	8,473,198	73.7%
2	Hawaii	1,420,593	992,190	69.8%
3	Minnesota	5,639,632	3,781,932	67.1%
4	Wyoming	579,315	366,080	63.2%
5	Colorado	5,667,952	3,505,064	61.8%
6	Kentucky	4,461,272	2,705,376	60.6%
7	North Carolina	10,401,960	6,276,545	60.3%
8	Iowa	3,148,618	1,894,288	60.2%
9	California	39,927,315	23,513,182	58.9%
10	New York	19,378,102	11,298,570	58.3%
	U.S. Total	325,632,380	173,784,293	53.4%

Table 2 shows that Ohioans do not simply register to use the state's libraries, they also actually utilize library services at an extraordinary rate.

Table 2: Summary of 2019 Public Library Usage Ranked for the Top Ten States

2019 Rank	State	Annual # of Reference Transactions	Total Annual Circulation	Total Library Program Attendance	# of Times Computers Used	Total # of Wi-Fi Sessions	Total # of Library Use Transactions
1	California	16,390,905	228,325,855	11,260,846	24,552,124	58,313,908	338,843,638
2	Ohio	16,533,553	178,936,541	7,197,722	12,597,536	23,840,254	239,105,606
3	Texas	13,453,389	116,614,471	7,310,988	11,418,535	65,610,826	214,408,209
4	New York	26,175,586	110,536,318	12,040,899	15,727,896	18,058,663	182,539,362
5	Illinois	8,972,942	105,751,742	5,522,573	9,656,121	29,817,175	159,720,553
6	Florida	19,350,692	103,313,885	5,776,780	13,401,242	14,694,672	156,537,271
7	Washington	3,294,008	86,799,553	2,463,752	6,109,495	23,044,416	121,711,224
8	Michigan	7,345,539	75,914,774	4,103,312	6,975,685	13,495,883	107,835,193
9	Maryland	7,831,005	56,179,833	2,591,245	4,978,818	29,875,116	101,456,017
10	Massachusetts	4,907,436	54,841,102	3,380,240	5,195,528	31,293,063	99,617,369
	U.S. Average	4,405,965	43,625,023	2,502,924	4,468,113	9,975,642	64,977,667

The five middle columns of Table 2 show different kinds of library services. "Reference Transactions" measures the number of inquiries for information made to library reference departments. "Circulation" reports the number of books, movies, CDs, and other materials borrowed from a library by its patrons. This figure includes circulation of both physical and electronic/digital items. "Program attendance" indicates the number of persons who attended programs offered to the public by libraries. "Computers Used" shows the number of persons who used library public computer terminals, and "Total Wi-Fi Sessions" indicates the number of times patrons accessed library wi-fi for use with their own computers. The total column shows the sum of the preceding five columns.

Table 2 shows that in 2019 Ohio ranks *second* in both annual circulation and total library usage behind only California. Texas, New York, Illinois, and Florida all have higher populations than Ohio, but the data clearly shows that none of these states come close to Ohio on either annual circulation or on cumulative library use transactions. Ohio has nearly 3.7 times as many transactions as the national average.

Table 3 takes the data developed for use in the preceding table and expresses total 2019 library usage (as shown in the rightmost "Total" column on Table 2) relative to 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 on a per person basis as compared to residents of other states.*

Table 3: Ranking of 2019 Public Library Usage by Transactions Per Capita

2019 Rank	State	2019 Total # of Library Use Transactions (from Table 2)	2019 State Population (from Table 1)	2019 # of Library Use Transactions Per Capita
1	Ohio	239,105,606	11,502,271	20.79
2	Maryland	101,456,017	6,016,447	16.86
3	Oregon	68,985,232	4,195,300	16.44
4	Washington	121,711,224	7,546,410	16.13
5	Colorado	85,647,316	5,667,952	15.11
6	Indiana	94,919,320	6,483,802	14.64
7	Massachusetts	99,617,369	6,814,406	14.62
8	Utah	45,680,338	3,161,105	14.45
9	Wisconsin	76,574,581	5,843,443	13.10
10	Kansas	36,570,925	2,911,505	12.56
	U.S. Average	64,977,667	6,512,648	9.98

Table 4 shows the same data as in Table 3, 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 3 manage to achieve their high library usage per capita ranking because they have relatively small and homogenous populations. None of the other states in Table 3 displays the degree of urbanization in Ohio. Table 4 shows a comparison between Ohio and the other nine most populous states. Generally, the comparison states in Table 4 more closely resemble Ohio's higher level of urbanization and ethnic diversity.

When Ohio's 2019 library usage per capita is compared to the states that most closely compare to Ohio the difference is remarkable. Ohio has more than twice the library usage per capita than the national average and seven of the 9 largest other states fail to achieve even one-half of the library usage recorded in Ohio. Compared to the two closest states on Table 4, in 2019 Ohio had 66% more library usage per capita than Illinois and 91% more than Michigan.

Table 4: Ten Largest States in Total Population Ranked by 2019 Public Library Use Per Capita

2019 Rank	State	2019 # of Library Use Transactions (from Table 2)	2019 State Population (from Table 1)	2019 # of Library Use Transactions Per Capita
1	Ohio	239,105,606	11,502,271	20.79
2	Illinois	159,720,553	12,741,080	12.54
3	Michigan	107,835,193	9,901,737	10.89
4	New York	182,539,362	19,378,102	9.42
5	California	338,843,638	39,927,315	8.49
6	Texas	214,408,209	28,701,845	7.47
7	Florida	156,537,271	21,208,589	7.38
8	Pennsylvania	91,207,446	12,702,379	7.18
9	North Carolina	73,207,470	10,401,960	7.04
10	Georgia	60,355,179	10,766,121	5.61
	U.S. Average	64,977,667	6,512,648	9.98

Another measure of library service is the annual number of library visitors. Table 5 provides a summary of total library visits in the top 10 states. Ohio ranks 3rd nationally in the total number of library visitors with 67,937,539 in 2019. This figure is 2.7 times higher than the 2019 U.S. average annual number of library visits of 25,004,301.

Table 5: Top 10 States in 2019 Total Number of Public Library Visits

2019 Rank	State	2019 # of Library Visits	2019 Rank	State	2019 # of Library Visits
1	California	148,410,446	6	Illinois	60,853,034
2	New York	95,175,355	7	Michigan	43,740,673
3	Ohio	67,937,539	8	New Jersey	42,035,525
4	Texas	66,097,346	9	Pennsylvania	40,275,669
5	Florida	63,288,735	10	Massachusetts	39,203,478
				U.S. Average	25,004,301

Table 6 provides a second perspective on library visits, using a “visit per capita” approach. *Ohio ranks 1st nationally in library visits per capita*, averaging 5.91 visits for each resident of the state in 2019. This figure is 54% higher than the U.S. average of 3.84 library visits per capita.

Table 6: Top 10 States in 2018 Number of Public Library Visits per Capita

2019 Rank	State	2019 # of Library Visits	2019 State Population	2019 Library Visits Per Capita
1	Ohio	67,937,539	11,502,271	5.91
2	Massachusetts	39,203,478	6,814,406	5.75
3	Connecticut	20,128,731	3,572,665	5.63
4	Vermont	3,480,676	626,299	5.56
5	Wyoming	3,124,031	579,315	5.39
6	Colorado	29,581,592	5,667,952	5.22
7	New Hampshire	6,849,464	1,356,458	5.05
8	Wisconsin	29,071,153	5,843,443	4.98
9	Maine	6,645,905	1,344,212	4.94
10	Rhode Island	5,170,991	1,052,566	4.91
	U.S. Average	25,004,301	6,512,648	3.84

II. State-by-State Comparisons of Library Expenditures & Costs

Section I of this report provided an overview of Ohio’s ranking among the 50 states in terms of the provision of library services. Section II of this report provides an overview of Ohio’s expenditure on library services, as well as assessment of whether Ohio’s investment in public libraries is cost-effective or not.

Table 7 shows the ten states with the highest per capita expenditures for public library services. Note that because some states do not provide library services throughout their entire geographic region, the population measure used for the per capita expenditure figures shown in Table 7 is that of the geographic areas within the state that are actually receiving library service. This population is referred to as the “unduplicated population” so as to avoid double counting in the 29 states where some geographic areas can be served by more than one library district.

Table 7 shows that Ohio had the nation’s 2rd highest library expenditures per capita in 2019, the most recent year for which complete comparisons for other states are available.

Table 7: Ranking of 2019 Public Library Operating Expenditures Per Capita

2019 Rank	State	Total 2019 Unduplicated Population of Library Service Areas	2019 Total Library Operating Expenditures	2019 Library Operating Expenditures Per Capita
1	New York	19,378,102	\$1,370,529,798	\$70.73
2	Ohio	11,502,271	\$783,047,396	\$68.08
3	Illinois	11,730,170	\$785,366,913	\$66.95
4	Oregon	3,694,645	\$242,528,784	\$65.64
5	Washington	7,436,699	\$470,019,579	\$63.20
6	Connecticut	3,572,665	\$219,298,280	\$61.38
7	Colorado	5,604,144	\$327,712,711	\$58.48
8	Indiana	6,100,143	\$354,609,591	\$58.13
9	Kansas	2,510,916	\$145,337,370	\$57.88
10	Alaska	649,334	\$36,860,982	\$56.77
	U.S. Average	6,328,991	\$266,272,145	\$42.07

While Ohio spends more per capita on public libraries than all states other than New York, Tables 1-6 of this report also showed that Ohio was among the top 3 states in every category of library service examined. Thus, *it is necessary to combine the library expenditure and service provision data in order to provide a true assessment of the cost-effectiveness of Ohio's funding of public libraries.* This assessment is provided in Table 8 that compares the cost per library transaction among the 50 states.

Dividing the number of public library usage transactions by state (computed in Table 2) into the total operating expenditures by public libraries in that state (from Table 7) results in the “cost per library transaction”. Note that on this measure a lower figure is better than a higher figure, as a lower cost per library transaction reflects greater efficiency in providing library services. ***Ohio ranks 37th among the 50 states, with a cost per transaction of \$3.27 (note that the state with the highest cost per transaction is ranked #1 and the state with the lowest cost per transaction is ranked #50). Ohio's figure is 20% below the national average of \$4.10 per transaction.*** Table 8 shows this information for the top 10 highest cost states, as well as for Ohio. Not only is Ohio's figure well below the national average, but in states of comparable size and urbanization, Ohio's cost per transaction is less than half of the cost per library transaction in New York, 54% of the cost of New Jersey, and 2/3rd of the cost of Illinois (which is tied with New Hampshire for 10th highest). The data in Table 8 clearly indicates that Ohio delivers its large amount of library services for a comparatively low cost.

Table 8: Top 10 States in 2019 Public Library Cost Per Usage Transaction, Plus Ohio and U.S. Average

2019 Rank	State	2019 Total # Library Transactions	2019 Total Public Library Expenditure	2019 Cost Per Library Transaction
1	New York	182,539,362	\$1,370,529,798	\$7.51
2	Louisiana	37,352,960	\$226,565,787	\$6.07
3	New Jersey	79,178,338	\$478,938,533	\$6.05
4	Rhode Island	9,243,960	\$54,004,260	\$5.84
5	Connecticut	38,954,134	\$219,298,280	\$5.63
6	Alaska	6,933,602	\$36,860,982	\$5.32
7	California	338,843,638	\$1,765,573,437	\$5.21
8	Wyoming	6,379,104	\$32,128,128	\$5.04
9	Hawaii	7,796,497	\$39,126,193	\$5.02
10	Illinois	159,720,553	\$785,366,913	\$4.92
	U.S. Average	64,977,667	\$266,272,145	\$4.10
37.	Ohio	239,105,606	\$783,047,396	\$3.27

III. Statewide Return on Investment from Ohio’s Public Libraries

As mentioned earlier, Ohio’s public libraries provide a wide array of services to patrons. Libraries make a variety of materials available for customers to borrow. These materials include books, audiobooks, movies, and music in both physical and digital/electronic format. Libraries also provide periodical subscriptions and reference materials for use within the library, as well as research assistance from library staff. As computer technology has advanced, libraries have made computers available for use in the library, provide free Wi-Fi service, and often provide basic computer training for customers as well. Technological changes also have caused libraries to expand reference materials to include electronic databases accessible both from within the library and from remote locations for library cardholders. In addition, libraries also offer a variety of programs for library customers, as well as make meeting rooms available for public use.

All of the services described above provide a tangible benefit to library users. A statewide “Return on Investment” (ROI) analysis compares the benefits provided to Ohio residents through the utilization of public library materials, services, and programs to the state total public library operating expenditures. Such an analysis must first rely on a methodology for assigning a dollar value to library services where possible. Such an assignment generally can estimate only the “direct” benefit from library services. A direct benefit reflects the value of the item, information, or entertainment provided by the library service itself. For example, a person who accesses a book about writing a resume receives the economic value of that information measured approximately by the value of the book.

Many library users may also receive “indirect” benefits, such as the use of the resume book leading to a new job. However, these indirect benefits are not only very difficult to quantify, but also likely to be unknown to the libraries providing the service.

Consequently, the analysis summarized in this report will quantify the direct benefits of library services where the availability of data and appropriate measures of value exist and then compare the statewide total benefit to statewide total library operating expenditure.

Valuation of Library Services

Data for this analysis was drawn from the Ohio Public Library Statistics data made available by the State Library of Ohio. The State Library compiles data submitted annually by Ohio’s 251 local library systems. 2019 is the most current year for which data is currently available. Data was also collected from a survey of the 16 largest library systems in the state in order to estimate some data elements that were not included in the State Library dataset. For the purposes of this analysis, the services and programs of the Ohio’s public libraries are organized into 5 categories:

- A. Circulation of Physical Materials including Books, Periodicals, DVDs, & CDs, and books on CD or tape
- B. Circulation of Digital Materials including eBooks, downloadable audio books, digital magazines, streamed movies, and music downloads
- C. Computer & Technology Services including patron use of library computers, Wi-Fi provision, & computer training
- D. Reference Services including non-circulating books and periodicals, provision of answers to reference questions, & electronic database usage
- E. Other Library Services, Programming and Outreach including meeting room use, children’s and adult programming, homework help sessions, and Bookmobiles.

Public libraries also typically provide many other services such as job & employment assistance, personal finance training, passport and GED assistance, etc... but these and other similar services are not included in the data compiled by the State Library.

Values were placed on the various materials and services in accordance with their value in the private marketplace. For example, in 2019 FedEx/Kinkos would allow a person to rent a computer for 49 cents per minute, a rate that works out to \$29.40 per hour. This rate was then applied to the total hours of library computer use. Similarly, the standard price for streaming a relatively current movie is about \$4 and this price was used for electronic movie borrowing. Book prices were computed somewhat differently, beginning with an average new book purchase price of \$23.80 (based on actual library costs) and then being reduced by a 50% discount factor that reflects the fact that books have resale value. While this report will not explain the library services valuation methodology in detail, it is based upon methodology developed by this author and used in previous Ohio Library Council and Ohio library ROI studies.

Table 9 below provides an overview of the estimated economic value deriving from the 5 different types of services provided by the Ohio’s public libraries in 2019.

Table 9: Summary of 2019 Ohio Public Library Statewide Economic Value

Library Service	Estimated Value	Share of Value
1. Physical Circulation	\$1,348,523,644	43.9%
2. Electronic Circulation	\$345,422,580	11.2%
3. Computer & Technology Services	\$494,523,129	16.1%
4. Reference Services	\$659,997,517	21.5%
5. Library Programs & Other Services	\$222,155,767	7.2%
2019 Library Total Economic Benefit	\$3,070,622,636	
2019 Library Total Operating Spending	\$779,738,301	
Direct Benefit to Spending ROI Ratio	3.94	
2019 Library Benefit w/ Multiplier Effect	\$3,884,030,572	
Benefit to Spending ROI w/Multiplier	4.98	

As shown in the table above, the total value to Ohio residents from using the state’s wide array of public library services in 2019 was nearly ***\$3.1 billion***. At the same time, total public library operating expenditures in 2019 were roughly ***\$780 million***. Thus, the statewide direct benefit-to-spending ratio for Ohio’s public libraries is ***3.94***. This means that ***Ohio’s public libraries directly return an average of \$3.94 in value to Ohio residents for every \$1 that is spent.***

Beyond the direct return of 3.94 on Ohio’s public library investment, state residents derive an additional benefit from the operations of libraries. There is an “economic multiplier effect” that occurs because the additional effect of the state’s libraries providing nearly \$3.1 billion in value to consumers is that this amount of money is “freed up” to be spent elsewhere in the area economy because the library materials and services are free of charge. This spending then ripples throughout the economy.¹

For purposes of this analysis, the “Household Consumption” economic multiplier for Ohio of 1.2649 as computed by the Bureau of Economic Analysis, U.S. Department of Commerce is used. When this multiplier is applied, the total value to Ohio residents of

¹ Note that this study does not compute the economic impact of *library expenditures* themselves – such as salaries of employees and purchases of books, computers & other materials – only the impact of the *benefits* received by library patrons. To also include the impact of library expenditures on the economy would be “double-counting” as these expenditures are paid for through taxes paid by residents, which in the absence of libraries would be available for spending on private goods.

the state's public libraries increases to nearly \$3.9 billion. When compared to the library's expenditures of \$779.8 million in 2019, the ***total Return on Investment derived from the materials and services provided by public libraries is 4.98. This means that for every \$1 spent by public libraries in Ohio, state residents receive an average of \$4.98 in value.***

Conclusion

Attention is sometimes focused on the level of state support for Ohio's public libraries. However, it is very misleading to consider only what Ohio spends on libraries without also considering the benefits that Ohioans receive from their libraries. When measures of library service are considered, Ohio libraries consistently rank at or very close to the top of national rankings. In fact, ***Ohio ranks 1st percentage of registered borrowers, 1st in library visits per capita, and 1st in library transactions per capita.*** When expenditures and services are combined, ***Ohio ranks 37th nationally in cost per library transaction.*** In addition, when the Return on Investment in Ohio's public libraries is computed, the statewide direct benefit-to-spending ratio for Ohio's public libraries is ***3.94.*** And when economic multiplier effects are accounted for the Return on Investment ratio increases to ***4.98.*** ***The findings in this report make it abundantly clear that Ohio's investment in public libraries is both cost effective and of high value to the state's residents.***