

The Development of Public Libraries in the United States, 1870–1930: A Quantitative Assessment

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The period 1870–1930 witnessed the emergence of the local public library as a widespread and enduring American institution. We document the expansion of public libraries in the United States using data drawn from library surveys conducted by the federal Bureau of Education. We then review causal accounts for that expansion. Exploiting cross-state and temporal variation in the data, we use statistical techniques to assess a number of plausible demand-and-supply factors affecting the pace of library development. Social and economic variables in the analysis include state income or wealth, urbanization, ethnic composition, and gender ratios. We also examine the effect of institutional innovations, such as state library commissions and library associations, that likely affected the establishment of public libraries. We confirm that library expansion was robustly related to urbanization and greater ethnic (immigrant) diversity and to institutional innovations and that it was greatly delayed in southern states.

Public libraries in the modern sense—local or municipal institutions offering free library services to the general public and supported by tax money—in the United States date back at least to 1833, when Peterborough, New Hampshire, established its public library. The first large public library in a major city was established in Boston over the period 1848–54. In 1849 New Hampshire became the first state to pass comprehensive enabling legislation, facilitating the process for localities to establish public libraries. But the public library movement grew only slowly in the decades after these New England firsts.¹ During the

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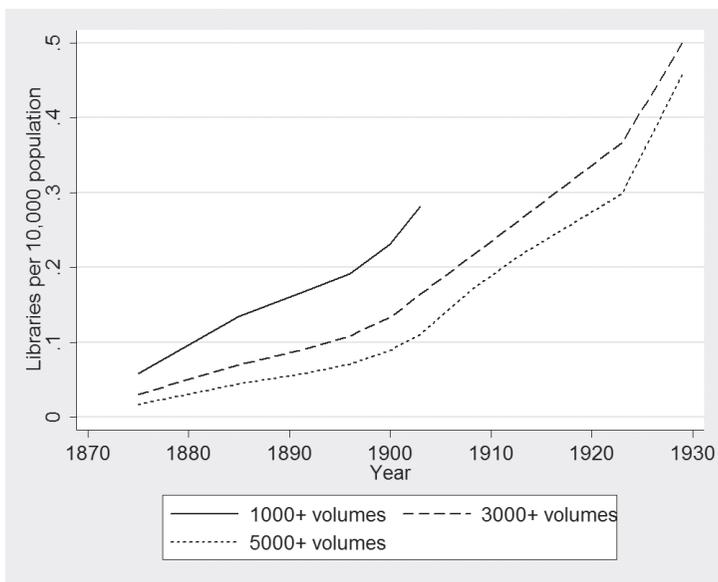


Figure 1. Public libraries per 10,000 population, by library size threshold. Narrow definition of public library. Branches counted as separate libraries. *Source:* US Bureau of Education.

late 1800s, however, the growth of public libraries accelerated, as can be seen in figures 1 and 2, which plot public libraries and volumes held in public libraries on a per capita basis for the period 1875–1929. The underlying data are derived from Bureau of Education library survey reports (discussed below) for different thresholds of library size.²

Although public libraries have come to fill a variety of roles, recreational as well as educational, they were originally conceived as part of the nation's broader educational movement, and it was their educational function that provided the principal justification for public support. Thus it is instructive to place the timing of public library expansion within the broader context of two other important changes in the educational apparatus of the United States: the emergence of compulsory primary education and secondary school enrollment. The free and compulsory elementary school movement championed by Horace Mann was already almost fifty years old by the time the library movement got rolling. By the late nineteenth century, most children in the country were enrolled in primary school, and many states were approaching nearly universal primary education. The high school movement, on the other hand, gained momentum slowly in the 1890s and took off only after 1910.³ Figure 3 plots a measure of public library

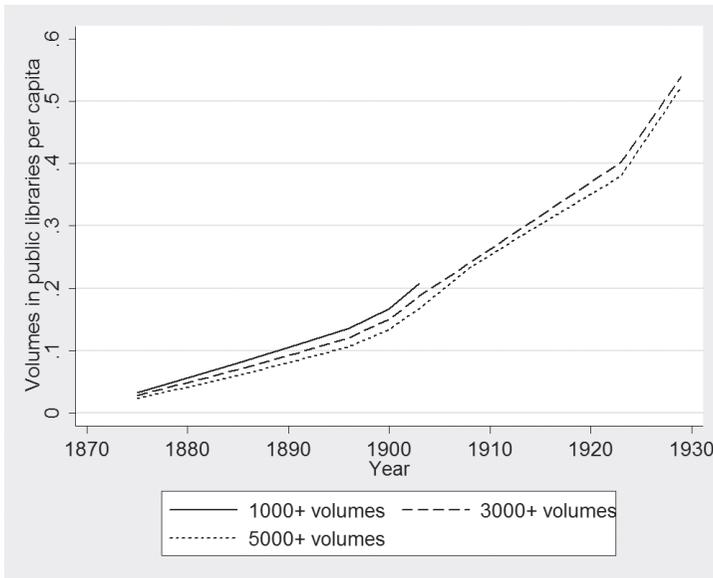


Figure 2. Volumes in public libraries per capita, by library size threshold. Narrow definition of public library, topcoded. Source: US Bureau of Education.

penetration—library volumes per capita—along with secondary school enrollment rates. By these measures, the public library movement appears to have begun its acceleration somewhat in advance of the major uptick in high school enrollments.⁴

Many researchers in the field of library history have devoted attention to the emergence and growth of the public library movement.⁵ Some of them have made use of the comprehensive library censuses conducted periodically by the United States Bureau of Education and its successor departments. But apparently only Robert Williams connected the library statistics with census and other data sources and then used statistical techniques to weigh the importance of various causal factors.⁶ Williams's analysis, however, was limited to cross-county and cross-state correlations and basic regression analysis. Furthermore, his period of focus, 1850–70, was before the period of ascent of public libraries, and the data on libraries from the census were, as he notes, quite unsatisfactory.

This article explores the impact of various factors that have been adduced to explain the growth of public libraries. We use the more comprehensive data of the Bureau of Education library surveys and cross-sectional, time-series statistical techniques. The next section discusses the library survey data we employ and summarizes the growth path of the public library movement, highlighting the expansion of library

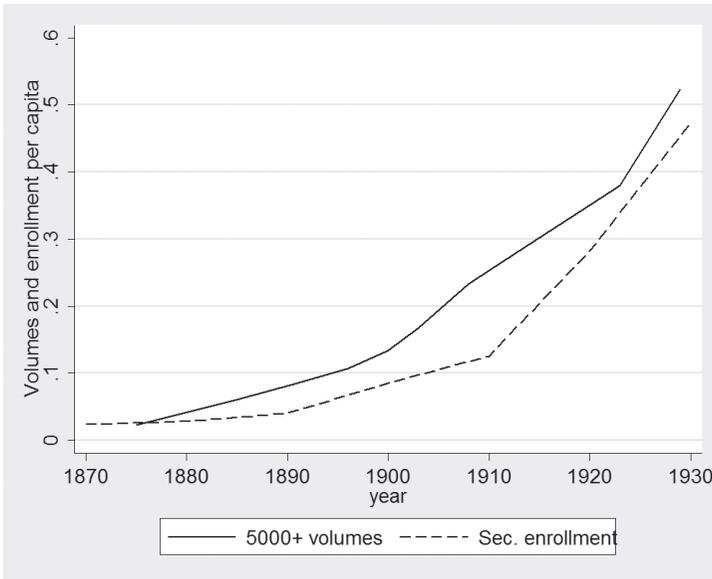


Figure 3. Volumes in public libraries per capita, plotted with secondary enrolment rate. Narrow definition of public library, libraries with 5000+ volumes, top-coded. *Source:* US Bureau of Education.

services after 1895 and geographical variation in the extent and timing of library development. We then review some of the salient theories that have been offered to explain the trends in library development. Finally, we provide some panel estimates (using data at the state level, over time) of the correlates of public library development. We show that public library development was more rapid in states with more immigrants, larger cities, and state-level institutions aimed at fostering library development. Public library development lagged in the South, even after controlling for various correlates that might explain regional differences.

Measuring the Growth of Public Libraries in the United States after 1870

Early momentum to establish public libraries was slow. In his exhaustive study of American libraries prior to 1876, Haynes McMullen was able to identify only 484 free public libraries as having existed at any point in time in the United States during the period before 1876.⁷ More than half (253) were located in New England. One-sixth (81) were the last remnants of an ill-fated experiment by the states of Michigan and

Indiana, which passed state laws mandating the creation of so-called township libraries. In all, 1,559 of these township libraries were created in these two states during the 1840s and 1850s, but most were very short-lived and so were not included by McMullen in his 484 total. The southern states lagged in the early development of public libraries, as they did in the development of educational institutions more generally, with only twelve free public libraries identified through the entire first century of the country's existence. Thus a region that accounted for nearly a third of the country's total population and a quarter of its white population in 1870 had produced only about 3 percent of its public libraries.

To track and analyze the spread of public libraries after 1870, we have assembled and coded data on individual libraries from special reports on libraries issued intermittently by the US Bureau of Education.⁸ These reports included extensive tables of information on individual libraries gathered from surveys conducted by the bureau. The surveys covered in our full data set were conducted in 1875, 1885, 1891, 1896, 1900, 1903, 1908, 1913, 1923, and 1929. The first of these reports, which appeared in 1876, notes that planning for the survey began with a list of every town "the population of which was sufficient to seem to justify the belief that it possessed a public library of some sort."⁹ Letters of inquiry were then sent, generally to the local postmaster, soliciting the names of any public libraries. In larger towns and in cities, the superintendent of public schools was also contacted, and in the larger cities "persons were selected to make special investigations."¹⁰ Previous listings of libraries, city directories, gazetteers, offices of institutions and societies, clergy, public officials, and the like were also consulted. Direct inquiries were then sent to the libraries identified: "This preliminary work involved the writing of some 10,000 letters, to which the responses have generally been most prompt and gratifying."¹¹ Statistics of libraries with at least three hundred volumes were tabulated in chapter 37 of the special report. Subsequent reports appear to have used similar methods.

The statistics reported in the published tables typically included the name and location of the library, some classification as to the type of library, whether services were free or by subscription, and the number of volumes in the collection. In some years the tables included financial statistics, year of founding, and/or name of librarian. Unfortunately, reports for different years use different minimum size thresholds for publishing individual library data. The reports for 1875 and 1885 list all libraries with three hundred or more volumes; the reports of 1891, 1896, 1900, and 1903 use a threshold of one thousand volumes; 1923 and 1929 use a threshold of three thousand volumes; and 1908 and

1913 use a threshold of five thousand volumes. In analyzing the evolution of libraries across years, we restrict our attention to consistent size thresholds. Our main findings are similar if instead we assume that the “minimal size” of what constitutes a library changed over time, so that a three-hundred-volume library in 1875 is comparable for our purposes to a three-thousand-volume library in 1923.

The library surveys reached and counted a wide range of libraries, such as those run by private associations (e.g., fraternal organizations) for their own membership; school, college, and university libraries; and other sorts of library institutions. Our interest here is in public libraries as community-based institutions providing access to books and other reading materials that were free and open to the public. Eventually these would largely be truly public institutions in the sense that they would be owned, operated, and financed by local governments. But especially in the early years of public library development, many free community libraries were run by nongovernmental voluntary associations. Such libraries were often termed “social libraries.”

The classification schemes used in the reports are inconsistent across years and often unsatisfactory for our purposes. Some degree of ambiguity is inevitable given the situation on the ground: the institution of the public library was itself evolving rapidly during these decades in both form and function. To allow for some flexibility, we have reclassified the libraries as public or not using two alternative schemes, one defining public libraries quite narrowly, the other somewhat more broadly. This article employs the narrow definition throughout, but the results are qualitatively similar using the broader definition.

For the 1875–1908 surveys, the reports typically classified what were clearly local public libraries as “public” or “general” libraries, and our narrow classification counts all of these as public. In addition, the narrow definition counts as public some other libraries that were classified in other categories but had names that clearly indicated that they served as a community’s or municipality’s public or “free” library. This would include such library names as “XX Public Library” and “YY City Library.”¹² To these libraries, our broader definition of public libraries adds all the libraries that were classified as “social” or “fraternal” libraries. Starting in 1913, the classification scheme used in the reports changed rather dramatically, shifting from a classification based on type of parent organization to “level of control,” such as local government, state government, or some nongovernmental entity. For the 1913–29 surveys, our narrow definition of public libraries includes those libraries

controlled by local governments plus libraries run by nongovernmental entities with “public”-sounding names, as above. For the broader definition, we add to these all other nongovernmental libraries, excluding those with names that clearly indicated they were not local public libraries (e.g., “XX Botanical Garden Library”).

Counts of total libraries and total volumes by minimum size threshold are presented in table 1. In 1891 there were 565 public libraries of three thousand volumes or more in the United States, and the number grew to 6,031 by 1929, a tenfold increase. This represents a growth rate of just under 8 percent per year. The total number of volumes experienced a similar tenfold increase. From this data on libraries, we calculated two basic measures of the penetration of public libraries by state and year of survey: libraries per capita and library volumes per capita. In this article we focus on the latter (volumes) for two reasons: first, volumes seem like a natural measure for actual library services; and second, the volumes measure is less sensitive to truncation problems introduced by varying thresholds of library size in the reports. Figures 1 and 2 illustrate the effect on per capita measures of varying the threshold number of volumes for inclusion in the data. Excluding smaller libraries leads to a fairly significant undercount of libraries (figure 1), but the impact on the volume count is much more modest (figure 2).¹³ Larger libraries get more weight in the volume count, so excluding the lower tail of the distribution has less impact. In the figures and the regression analysis reported below, we have truncated (“topcoded”) the number of volumes in any single library at fifty thousand. This procedure aims to prevent a very small number of huge libraries (such as the New York Public Library) from dominating our statistics. Volume counts for such “libraries of record” are probably not indicative of the access of the general public to library books. As it happens, none of our findings is substantively changed if we do not truncate the number of volumes in these larger libraries in our volume counts.

Figure 4 plots volumes per capita by region (using the five-thousand-volume threshold for consistency). As in the case of secondary education, the Northeast led the way early on, but by the late 1920s the West had assumed the lead with the highest per capita penetration of library services. In the South, public libraries continued to be all but nonexistent before 1903, and even after that the region’s library development lagged far behind the rest of the country. A question we address with the statistical analysis is whether the South’s retardation in library development can be explained by other regional differences, such as lower rates of urbanization, income, or general education in the South.

Table 1. Number of public libraries and total volumes in public libraries from library surveys for different minimum size thresholds

	Number of libraries with at least:				Total volumes in libraries with at least:			
	300 vols.	1,000 vols.	3,000 vols.	5,000 vols.	300 vols.	1,000 vols.	3,000 vols.	5,000 vols.
1875	375	256	134	75	1,907,307	1,839,018	1,627,864	1,401,866
1885	1,174	750	391	248	5,753,674	5,523,291	4,917,133	4,392,105
1891		1,049	565	363		8,567,092	7,740,126	6,986,226
1896		1,332	756	493		11,741,453	10,711,807	9,722,638
1900		1,740	1,005	672		16,353,564	15,066,578	13,820,407
1903		2,256	1,315	888		20,231,272	18,581,536	16,972,527
1908				1,500				23,084,696
1913				2,078				28,118,216
1923			4,046	3,294			49,599,477	47,155,277
1929			6,031	5,528			69,306,177	67,363,166

Source: US Bureau of Education, library survey reports, various years.

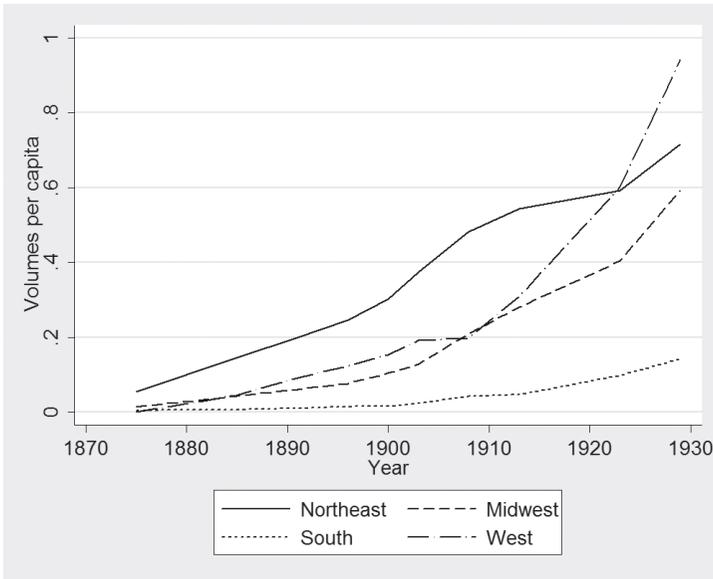


Figure 4. Volumes per capita by region, for public libraries with at least 3,000 volumes. Narrow definition of public library, topcoded at 50,000 volumes. Source: US Bureau of Education.

Explaining the Growth of Public Libraries

Jesse Shera reviews early work by historians of the public library movement and suggests that Arnold Borden's essay in the first volume of *Library Quarterly* was a "harbinger of a new phase in library historiography."¹⁴ Borden adduced several factors behind the rise of public libraries, which he (prematurely) dated as occurring between 1850 and 1890. First was the role of the federal government, second was the largesse of philanthropists, and third was the demand for educational activities resulting from the rise of an affluent middle and working class that had more time for leisure and was more capable of influencing public spending through suffrage. Borden seems to have been the first library historian to begin cataloging the set of supply-and-demand factors and institutional innovations that were likely responsible for the growth of public libraries in villages, towns, cities, and counties across the United States.

The remainder of this section follows his lead, reviewing many factors discussed by Borden's successors.¹⁵ While our list has a bit of the "what to buy at the store" quality, it is abbreviated compared with Gwladys Spencer's colossal dissertation on the establishment of the Chicago Public Library in 1872.¹⁶ She concludes her work with a list of ninety-four causes that led to

the establishment of the library at that particular moment in history. We divide our discussion into the following four kinds of factors, though obviously there is much overlap: (1) institutional precedents for public libraries; (2) institutional innovations that enabled the establishment of public libraries; (3) supply-side factors; and (4) demand-side factors.

Institutional Precedents

The public libraries that marched across the American landscape at the end of the 1800s evolved from a number of antecedent institutions, most notably, so-called social libraries and school district libraries. Social libraries were typically corporations formed by voluntary associations and funded by subscription or the issuance of shares. McMullen identifies 3,296 social libraries in existence at some point in time in the United States before 1876.¹⁷ Many of these social libraries were ultimately transformed into truly public libraries.¹⁸ As McMullen notes, “When the members of a library society lost interest in their collection, they often turned it over to the town government, which converted it to a public library by supporting it financially and opening it to the citizens of the town.”¹⁹ In some communities, publicly supported libraries competed with social libraries for a time. In Otsego, Michigan, for example, the Ladies’ Library Association developed its own collection of books beginning in 1868, despite the presence of the township library, founded in 1844. Eventually, however, expansion of the township library collection in the 1880s drew members away from the association. According to Claxton Helms, “Free service, supported by taxes, was much more attractive than membership in an organization of somewhat limited service.”²⁰ The two institutions ultimately merged when the Ladies’ Association sold its building and books to the township in 1905.

Social libraries commonly shared the same basic organizational form as free public libraries, being governed by a board of trustees whose membership often constituted a “who’s who” of local residents. In a number of communities, free public libraries continued to be non-governmental legal entities and provided their services under contract to local governments. As late as the early 1930s, according to Carleton Joeckel, one-sixth of public libraries in cities of more than thirty thousand people were owned or controlled by associations or corporations legally independent of the city government.²¹ In this sense, boards of trustees of the social libraries agreed to turn over the “private” social libraries for public use in return for steady funding from municipalities. The existence of a large supply of these social libraries available for

conversion must be taken into account when explaining the growth of public libraries. Joeckel estimates that “of the first twenty-five free libraries established in Massachusetts . . . seventeen absorbed one or more preceding social libraries in various ways, some as outright gifts, some by purchase, and some as more or less permanent loans.”²² Of course, taking account of the role of social libraries as a precursor of truly public institutions merely pushes the question of causal factors back a step.

The school district library was another important precursor to the modern free public library. Libraries run by local school districts were often intended to make reading materials available not only to schoolchildren but to adults as well. In 1835 the state of New York passed the nation’s first school district library law, permitting school districts to tax for the purpose of providing free library service to pupils and the public.²³ Similar laws would be passed in fourteen other states by 1855. Such libraries were quite numerous by midcentury: the census of 1850 reported a total of just over twelve thousand nationwide.²⁴ The scheme of providing library services to the general public through libraries administered by local school districts eventually gave way to the public library run by towns or cities. Joeckel and C. Seymour Thompson suggest that the school district library movement was ill-fated in all but a few places, having been imposed top-down from the state level and generally creating libraries that were too small to be viable community institutions: “Beginning with much promise in most states, [the school district library movement] either died out completely or became solely a school library movement.”²⁵ Nevertheless, school district libraries set important precedents, establishing the legitimacy of taxation in support of free public library service and linking libraries and public education (in this case, adult education) in the mind of the public.

Institutional innovations

Localities desirous of public libraries could not just establish them willy-nilly. Before the New Hampshire enabling legislation of 1849 spread to other states, a locality had no convenient legal basis for taxing local property to fund a library. To the extent that local library services were a local public good subject to free riding, where residents took advantage of library services without contributing toward the library’s upkeep, library-enabling legislation was a potentially critical legal innovation permitting the state’s coercive power to be applied to library funding. Enabling legislation that authorized localities to use tax funds to support public libraries evolved from the precedent of local funding

of public schools via the school district library movement, mentioned above. Legislation during the period after 1870 was much more expansive in giving municipalities authority to establish tax-supported public libraries. In some states, residents had to vote on measures to authorize taxation for libraries, while in other states town councils could enact the necessary legislation on their own.²⁶

The state constitutions of Indiana and Michigan included provisions essentially mandating township libraries during the period 1830–60. Consequently, of the 1,659 free public libraries that McMullen was able to identify in the midwestern states between 1786 and 1876, some 1,559 were township libraries in either Michigan or Indiana. Thus during this period, for seemingly exogenous reasons, Michigan and Indiana had more public libraries than similar states nearby, such as Wisconsin, Illinois, and Ohio. These mandated township libraries established in Michigan and Indiana during the mid-1800s were small, often no more than a shelf of books, and did not survive many years. By the beginning of the period under consideration in this article (1870), Michigan and Indiana did have more public libraries per capita than their neighbors Illinois and Ohio but not more library volumes per capita.

Also important in enabling public libraries were state library commissions and state library associations, which acted as full-time advocates and guides for the creation of new libraries in townships and counties in the state. Established by legislation, library commissions were state entities, typically with small budgets, consisting of a few professional and full-time employees charged with helping localities establish libraries. These officials traveled the state explaining library legislation and helping establish libraries. They also explained procedures for obtaining Carnegie grants for public library buildings. Writing about Alabama, Shannon White opined that “without an effective state library program in place and lacking public support, communities experienced great difficulty in gathering information necessary for participation in the Carnegie program.”²⁷ Associations were voluntary organizations with a similar mission, having as members the librarians of existing public libraries. The New Hampshire Library Association was apparently the first state association, established in 1889, while the New York Library Association was founded in 1890, and other state library associations followed.

The timing of the great expansion of public libraries coincides closely with the formation of state library associations and commissions. Figure 5 details the diffusion of commissions and associations across states after 1890.²⁸ Of course, to some extent these entities were endogenous outgrowths of the spread of local public libraries and allied interest groups.

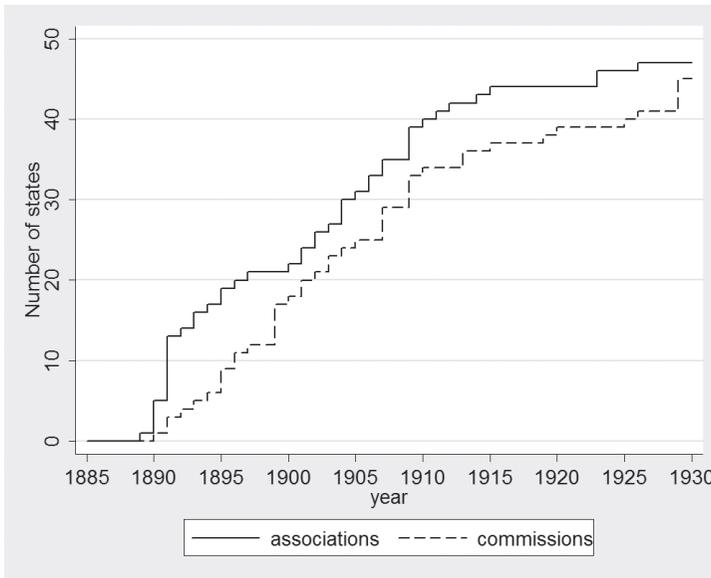


Figure 5. State library associations and commissions, cumulative number of states, 1885-1930. Author data from various sources.

Students of local and national public library history note that the library movement was inextricably tied to the growth of women's organizations and eventual attaining of suffrage. The last quarter of the nineteenth century witnessed a proliferation of women's literary and cultural clubs in American cities and towns.²⁹ The clubwomen's ideology of "domestic feminism" emphasized the role of women in education and cultural uplift, and libraries became a key component of their civic reform efforts.³⁰ A frequent claim in the library historiography is that by the 1930s, "75 percent of the public libraries in this country owed their origins to women's clubs."³¹ Although the original source and the veracity of this figure are uncertain, it seems to be of a plausible magnitude. Paula Watson cites documentary evidence from a number of states to back up the general claim. As of 1937, for example, 70 percent of Oklahoma public libraries "owe[d] their existence to women's clubs."³² Women's organizations also founded the large majority of public libraries in such states as Kansas, Virginia, Florida, and North Dakota during the period under consideration, and they often were the driving force behind soliciting funds from philanthropic sources such as Andrew Carnegie. The Iowa Federation of Women's Clubs was a prime mover in pressing the state legislature for the establishment of a state library commission to promote local library development and librarian training.³³

The Supply Side

The philanthropy of Andrew Carnegie played an important role in the spread of public libraries. Carnegie grants, for example, helped establish about 85 percent of the larger public libraries in California existing in 1919.³⁴ Almost seventeen hundred communities received grants to establish, improve, or replace library buildings. A common refrain is that Carnegie “transformed the American library landscape.”³⁵ Figure 6 plots the cumulative number of libraries supported by Carnegie library grants along with the total number of public libraries of at least five thousand volumes enumerated in the library surveys for the period 1890–1923. Because Carnegie grants did not always establish new libraries, and because some percentage of Carnegie libraries presumably fell below the five-thousand-volume threshold to be counted in the survey data, the two series are not strictly comparable, but the plot nonetheless suggests that Carnegie libraries constituted a significant share of public libraries built prior to World War I. Carnegie attached only a few conditions to the grants: the municipality had to donate the land and had to agree to dedicate for the library annual tax revenue equivalent to 10 percent of the building grant; and building plans had to be reviewed by Carnegie’s secretary, James Bertram, before funds were delivered.

Carnegie was not the only library philanthropist, and across the country major benefactors either funded libraries during their lifetime or left bequests for public libraries. To our knowledge, no one has compiled a set of comprehensive numbers to estimate the sum of this other private philanthropy, but casual observation of the histories of hundreds of local libraries suggests it was substantial. Samuel Green provides a contemporary account in which he reminisces on his involvement with many of the philanthropic and volunteer efforts of the period.³⁶ James Wellard also gives prominence to philanthropy in his 1937 *Book Selection: Its Principles and Practice*.³⁷

Local governments were obviously the other principal source of funding for public libraries, and the fiscal capacity of local governments seems to have grown substantially during this period. John Wallis refers to the period 1842–1933 as “the era of property finance and local government.”³⁸ Between 1890 and 1922, corresponding roughly to the period of rapid public library expansion, local government revenues increased from under 3 percent of GDP to over 5 percent. The share of local government in total government revenues at all levels reached its historical peak on the eve of World War I, at about 56 percent.³⁹ The predominant source of local tax revenues was property taxes. Increased property taxation was politically feasible to the extent that it funded

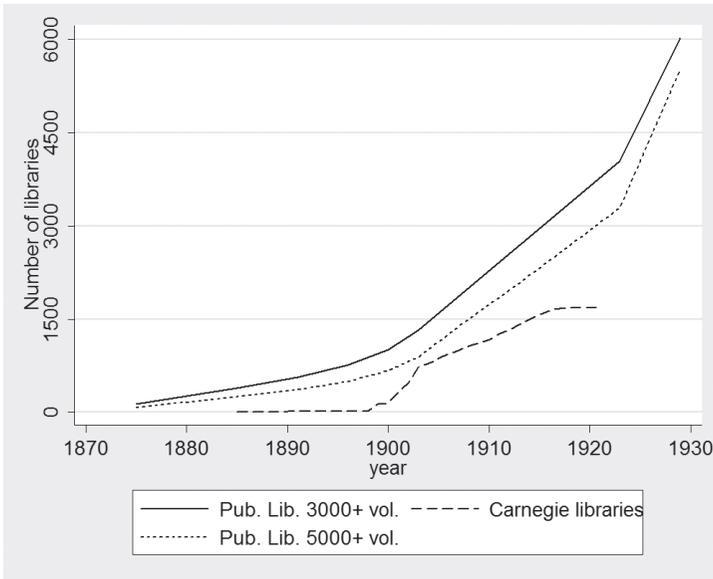


Figure 6. Public libraries and Carnegie libraries. Narrow definition of public library. Branches counted as separate libraries. Source: US Bureau of Education.

benefits that increased local property values such as schools, public utilities, local infrastructure, and perhaps library services. Although libraries probably remained a small and fairly stable fraction of local budgets, the general expansion of local governments over this period shifted the budget constraints for all forms of local spending.⁴⁰

Demand Factors

To the extent that public libraries are viewed as an aspect of a broader movement toward increased public provision of education, some of the same demand factors associated with the rise of mass schooling in the nineteenth and early twentieth centuries should be relevant for libraries as well. Recent research suggests that economic growth and consequent rising average income and wealth, well under way in the United States at the turn of the century, played an important role in the increase in school enrollments at both the primary and secondary levels.⁴¹ But rising income can only be part of the story. As Claudia Goldin and Lawrence F. Katz note, high school attendance rates in England lagged far behind those in the United States during the first half of the mid-twentieth century in spite of similar per capita incomes.⁴²

Rising levels of literacy and educational attainment themselves must have increased demand for library services, although the reverse causation may have occurred as well. A perennial debate in the history of education and literacy in the United States is the importance of legislative mandates. In explaining high primary and secondary school enrollment rates, attention has been paid to compulsory schooling and child labor laws. Recent work suggests that compulsory schooling laws had a quite modest causal impact on school enrollments.⁴³ But to the extent that these laws were effective, they bolstered the demand for libraries under the weak assumption that libraries and schooling were seen as complements rather than substitutes. (For a time line of compulsory education laws, see the work of August Steinhilber and Carl Sokolowski.)⁴⁴

The population size of any particular locality would also likely have influenced the development of libraries. To be attractive to readers, a library collection had to be of some minimum scale. The larger the community of taxpayers, the lower the per-person cost of attaining that scale. Because of this, local libraries were unlikely to emerge until a local community reached a threshold population size or density.

Many authors have suggested that libraries were demanded by established citizens as a way to assimilate or control immigrant groups.⁴⁵ But the presence of large numbers of immigrants may also have worked against the demand for public libraries to the extent that ethnic heterogeneity was associated with greater heterogeneity in preferences for public goods or lower levels of civic engagement, as suggested, for example, by Goldin and Katz in their work on the high school movement.⁴⁶ Dora Costa and Matthew Kahn summarize a range of empirical work by economists using both current and historical data that show lower civic engagement in communities with greater ethnic or economic heterogeneity, where civic engagement is measured by rates of volunteering, membership in organizations, state spending on public goods or redistribution, self-reported levels of trust, and other measures.⁴⁷

Finally, shifts in preferences and ideology were probably important, if difficult to measure. Such shifts were actively pursued by early library promoters, referred to as “missionaries” and “apostles” by Dee Garrison.⁴⁸ Lowell Arthur Martin suggests that the ideology of the public library movement was an amalgam of four conceptions of the role of libraries: as democratic institutions promoting good citizenship (see Sidney Ditzion); as educational institutions complementing public schools, early on intended for continuing adult education and self-education but by the 1920s increasingly serving children as their main educational function; as a source of recreational reading material; and as institutions

servicing a humanitarian mission, offering an alternative to the saloon, elevating youth, and controlling the masses.⁴⁹ Susan Swetman carefully reviews public discourse surrounding drives to establish public libraries in twenty communities in Utah and Washington at the turn of the century.⁵⁰ In the booming Inland Empire communities of Washington, libraries were seen as markers of economic progress and enticements to settlers to take up residence in progressive “can-do” kinds of towns. In Utah, by contrast, public discourse treated libraries as places where the morals of wayward youth might be improved. Swetman draws attention in particular to libraries as an amenity and signal of prosperity used in the competition between towns to attract new residents, even in cases where current residents did not place much value on library services.

Descriptive Statistics of the Data

Quantitative measures of many of the causal factors that loom large in library historiography, such as the women’s movement, philanthropy, and local voluntarism, are elusive. But the impact of some basic economic and demographic influences can be estimated along the lines of Goldin and Katz’s work on cross-state variation in the high school movement.⁵¹ To assess the potential importance of some of these factors in the spread of public libraries, we present statistical results based on panel regressions at the state-by-year level of aggregation using as a dependent variable per capita library volumes held in public libraries. These regressions must be considered essentially reduced-form and descriptive, but the results are nonetheless suggestive of factors at play in library development and point to some similarities to as well as contrasts with the case of secondary education. We employ data from seven of the library surveys that are spread fairly evenly in time: 1875, 1885, 1896, 1903, 1913, 1923, and 1929. The years of the United States census, source of most of our explanatory variables, do not correspond with the library survey years, and so census variables are interpolated and then predicted for the library survey years. We interpolate using a cubic spline technique, which involves fitting a curve to the census values when charted over the years and then predicting the values for the years of the library surveys.

Table 2 provides summary statistics for the dependent and explanatory variables for all years combined and selected individual cross sections. Our core explanatory variables are very much in the spirit of the variables used in Goldin and Katz’s state-level regressions on secondary education. Basic demographic controls include proportion female,

proportion black, proportion foreign-born, proportion of the population under eighteen, and proportion sixty and over. The United States grew older over this period, with the proportion under eighteen declining from .42 in 1875 to .38, while the elderly increased their share of the population from .05 to .08.

Demand for library services may have varied with the local age composition to the extent that libraries were viewed as complementary to educational services more generally. Furthermore, as Goldin and Katz argue, demographic variables may serve as proxies for community solidarity or homogeneity (or its absence), which could have been important in decisions over the provision of a public good such as libraries. In their results, a measure of ethnic heterogeneity (percent Catholic) is negatively related to secondary education rates, whereas proportion elderly is positively related, the latter variable perhaps proxying for community stability and therefore solidarity.

We use two urbanization variables, both of which measure the proportion of the population residing in "urban" areas. The first employs the conventional census urban population threshold of twenty-five hundred, and the second employs a larger urban threshold of twenty-five thousand. The urban proportion rose from .20 in 1875 to .46 in 1929, while the proportion in cities similarly rose from .10 to .28. Place size would matter if library services were subject to local scale economies. Addition of the larger threshold reflects our presumption that rather few towns with populations as small as 2,500 would have been able to support their own libraries; Carnegie, for example, gave the large majority of his grants to towns with populations in excess of 2,500. Under the assumption of some minimum population threshold, library penetration in a state might also have depended not only on the proportion of the population urban but also on the actual *number* of such places per capita. We experimented with including as an explanatory variable the ratio of the number of urban places to population at the same urban population thresholds and other variants, but these variables are highly collinear with the standard urbanization variables and are not presented here.

We include two variables related to the level of economic development. The proportion of workers in manufacturing, which rose from .12 in 1875 to .19 in 1929, is an indicator of industrialization. Real property tax revenue per capita, which quadrupled over the period, should serve as a proxy for both local fiscal capacity on the supply side and per capita wealth on the demand side. State-level estimates of per capita income, which are available for some years in our sample period, are positively correlated with our property tax variable and yield similar results in regressions, not reported here.

Table 2. Means and standard deviations of variables in state-year panel data, all years combined and selected years

	All years	1875	1896	1913	1929
Volumes per capita in public libraries with at least 300 volumes	0.06 (0.134)	0.028 (0.076)			
Volumes per capita in public libraries with at least 1,000 volumes	0.121 (0.233)	0.026 (0.073)	0.142 (0.232)		
Volumes per capita in public libraries with at least 3,000 volumes	0.231 (0.357)	0.022 (0.062)	0.119 (0.197)		0.549 (0.497)
Volumes per capita in public libraries with at least 5,000 volumes	0.216 (0.324)	0.017 (0.048)	0.101 (0.168)	0.253 (0.295)	0.521 (0.467)
Proportion female	0.475 (0.043)	0.459 (0.077)	0.474 (0.036)	0.476 (0.030)	0.488 (0.017)
Proportion black	0.110 (0.165)	0.127 (0.188)	0.112 (0.176)	0.104 (0.160)	0.096 (0.137)
Proportion foreign-born	0.133 (0.103)	0.156 (0.127)	0.148 (0.107)	0.134 (0.096)	0.093 (0.076)
Proportion under 18	0.399 (0.063)	0.422 (0.085)	0.412 (0.057)	0.378 (0.056)	0.379 (0.045)
Proportion over 59	0.066 (0.024)	0.048 (0.026)	0.063 (0.022)	0.068 (0.019)	0.084 (0.020)
Proportion living in a place with 2,500 population or more	0.345 (0.215)	0.203 (0.176)	0.305 (0.207)	0.389 (0.209)	0.457 (0.200)
Proportion living in a place with 25,000 population or more	0.198 (0.188)	0.098 (0.125)	0.166 (0.167)	0.229 (0.200)	0.285 (0.204)
Proportion of workers in manufacturing	0.153 (0.119)	0.120 (0.109)	0.117 (0.104)	0.185 (0.129)	0.185 (0.109)
State and local property tax levies per capita in thousands (1900 dollars)	0.011 (0.007)	0.004 (0.003)	0.008 (0.004)	0.013 (0.006)	0.018 (0.007)
Years with state library association	10.121 (12.554)		2.125 (2.907)	12.813 (8.826)	27.5 (11.310)
Years with state library commission	7.876 (11.213)		0.813 (1.806)	9.688 (8.008)	22.708 (12.509)
Observations	330	45	48	48	48

Note: “Unweighted” means “across states.” Standard deviations are in parentheses. Hawaii, Alaska, and Washington, DC, are not included, and there are no census results for Oklahoma and the Dakotas prior to 1890.

In a separate specification we examine the impact of two variables for statewide institutions in support of library development: state library commissions and associations. Using the founding dates of each association and commission, we calculate the number of years the organization had been in existence at the time of each library survey. These variables measure the length of exposure to any library-boosting activities undertaken by such institutions. Obviously, these institutions are also very likely to be endogenous to local library development or other unobserved factors affecting demand for public libraries, so their coefficients cannot be considered estimates of causal effects without further analysis.

The panel regressions include the equivalent of “dummy variables” that take on a value of zero or one for observations from each particular state. These dummy variables are the equivalent of controlling for the “fixed effect” of each state. By controlling for fixed effects, we capture any unobserved systematic differences across states in the propensity to develop public libraries. In particular, the fixed effects should control for cross-state variation in initial conditions, such as the extent of quasi-public social or association libraries that might be converted to public libraries. The inclusion of state fixed effects means that the effects of the explanatory variables are estimated from within-state variation across time in those variables. That is, the estimate of the effect of an explanatory variable is akin to an average of the effect of changes over the time period in that variable in each of the fifty states, and thus the estimate of the effect is not due to differences across states in the explanatory variable. In each regression we also include a separate dummy variable for each survey year (leaving 1875 as the excluded category). The coefficients on the year dummies capture any time trend in public library development not explained by movements in our other dependent variables. Finally, we add interactions between the year dummies and a dummy variable for the South.⁵² This allows us to see whether the pattern of divergence between the South and non-South, so evident in figure 4, can be explained by movements in the measurable explanatory variables.

Results of Analysis

Table 3 reports the results for four alternative specifications of the regressions. The first two use all seven survey years, restricting our count of volumes per capita to public libraries with at least five thousand volumes for consistency across samples. Specification 1 uses only the explanatory variables that were likely to be exogenous to public library development, while specification 2 adds the library association

Table 3. Correlates of public library development: fixed-effects regressions. (Dependent variable: Volumes per capita in public libraries.)

	Minimum number of volumes in library			
	5,000 (1)	5,000 (2)	3,000 (3)	1,000 (4)
Proportion of population female	0.204 (0.65)	1.192 ^a (0.64)	-0.0364 (0.78)	1.688 ^b (0.77)
Proportion of population black	-0.61 (0.54)	-0.273 (0.52)	-0.653 (0.64)	-0.251 (0.95)
Proportion of population foreign-born	1.191 ^c (0.28)	1.024 ^c (0.27)	1.014 ^c (0.34)	2.322 ^c (0.36)
Proportion of population urban	-0.464 ^a (0.24)	-0.579 ^b (0.23)	-0.119 (0.30)	-1.008 ^c (0.31)
Proportion of population in cities of 25,000+	0.547 ^c (0.21)	0.509 ^c (0.20)	0.355 (0.26)	0.121 (0.34)
Proportion of workers in manufacturing industry	-0.0461 (0.29)	-0.32 (0.28)	-0.192 (0.36)	-0.0353 (0.53)
Proportion of population under age 18	0.773 ^a (0.40)	0.372 (0.38)	0.764 (0.48)	0.0473 (0.51)
Proportion of population over age 59	-2.075 ^b (0.97)	-3.159 ^c (0.93)	-2.429 ^b (1.18)	-4.427 ^c (1.06)
State and local property tax levies per capita in thousands (1900 dollars)	-5.877 ^a (3.53)	-4.93 (3.30)	-13.68 ^b (5.28)	0.256 (6.96)
Years with state library commission		0.004 ^b (0.00)		
Years with state library association		0.008 ^c (0.00)		
Year 1885	0.0956 ^b (0.04)	0.109 ^c (0.04)	0.113 ^b (0.05)	0.189 ^c (0.04)
Year 1896	0.225 ^c (0.05)	0.198 ^c (0.04)	0.267 ^c (0.06)	0.394 ^c (0.05)
Year 1903	0.374 ^c (0.05)	0.297 ^c (0.05)	0.445 ^c (0.06)	0.579 ^c (0.07)
Year 1913	0.549 ^c (0.06)	0.392 ^c (0.06)		
Year 1923	0.772 ^c (0.07)	0.513 ^c (0.08)	0.887 ^c (0.09)	
Year 1929	1.047 ^c (0.08)	0.711 ^c (0.09)	1.175 ^c (0.10)	

Table 3, *cont'd.*

	Minimum number of volumes in library			
	5,000 (1)	5,000 (2)	3,000 (3)	1,000 (4)
South 1885	-0.0743 (0.06)	-0.0751 (0.05)	-0.0929 (0.07)	-0.128 ^c (0.05)
South 1896	-0.164 ^c (0.06)	-0.116 ^b (0.06)	-0.205 ^c (0.07)	-0.269 ^c (0.06)
South 1903	-0.288 ^c (0.06)	-0.192 ^c (0.06)	-0.350 ^c (0.07)	-0.411 ^c (0.06)
South 1913	-0.412 ^c (0.07)	-0.277 ^c (0.07)		
South 1923	-0.558 ^c (0.08)	-0.399 ^c (0.08)	-0.645 ^c (0.09)	
South 1929	-0.758 ^c (0.08)	-0.589 ^c (0.08)	-0.851 ^c (0.10)	
Constant	-0.352 (0.26)	-0.544 ^b (0.24)	-0.183 (0.31)	-0.700 ^b (0.33)
Observations	327	327	279	183
R-squared	0.776	0.807	0.773	0.683
Number of states	48	48	48	48

Notes: Standard errors are in parentheses. ^a $p < 0.1$. ^b $p < 0.05$. ^c $p < 0.01$.

and commission variables, which were likely endogenous to unobserved factors that contributed to library development. Specifications 3 and 4 show estimates that allow for libraries with at least three thousand and one thousand volumes, respectively, which entails restricting the sample to those survey years with these volume counts.

In all four specifications, the demographic controls that are consistently statistically significant are the proportion foreign-born and the proportion over age fifty-nine. The effect of nativity is large. The proportion foreign-born is about .13 over the entire period and set of states, with standard deviation of about .10. A one-standard-deviation increase in proportion foreign-born, then, is associated with an increase in volumes per capita of about .12 (because a full one-unit increase in the explanatory variable increases the outcome by 1.19), which is more than a third of the full-sample standard deviation. The sizable positive impact of proportion foreign-born is the reverse of the effect of ethnic heterogeneity that Goldin and Katz find for secondary schooling, suggesting

that the ideology of Americanization may have played a relatively more important role in the demand for public libraries than did social homogeneity or solidarity.

The proportion of the population over the age of fifty-nine has a fairly large negative impact. A one-standard-deviation increase is associated with a decrease in volumes per capita of about .05; the mechanism for such a finding is not clear, though perhaps the age composition is an effect of migration from rural homesteads to more urban places that are more likely to have larger libraries. The remaining demographic controls—proportion female, proportion black, and youth composition variables—do not generally have significant effects. It is likely that these variables do not change much from decade to decade within states, making it difficult to identify their impact on library development statistically.

The two urbanization coefficients are revealing: other things being equal, an increase in the proportion of the population residing in urban areas has a marginally significant negative impact on library development, whereas an increase in the proportion residing in larger towns (more than twenty-five thousand) has a positive and statistically significant impact, at least in those regressions that include libraries with over five thousand volumes (columns 1–2). The coefficient is .547 in column 1, indicating that a one-standard-deviation increase in the proportion living in cities (about .19) would lead to a roughly .10 increase in volumes per capita (.19 x .547). This pattern is consistent with the existence of a minimum scale threshold for the viability of a local public library. Certainly Carnegie, in deciding whether to fund a local community's request, took into account the town's population.

Unexpectedly, the coefficient on real per capita tax revenue is generally negative, although it is significantly different from zero in only two specifications. The effect of proportion of employment in manufacturing is insignificant in most specifications.

The coefficients on the year dummies indicate a significant positive time trend in library development outside the South, even after controlling for the variables included here. The interactions of the South and year dummies, with their clear negative time trend, reveal that the South was falling further behind the rest of the country in library development, even after controlling for demographics and urbanization.

Specification 2 adds the variables for state library associations and commissions to the specification in column 1. Again, these count the number of years in existence of the organization as of the library survey year. Both coefficients are positive and statistically significant. The effects are modest in magnitude. An additional ten years of exposure

to a library commission increased volumes per capita by 0.04, about an eighth of a standard deviation, and the effect of associations was about twice that size. As noted, the existence of a library commission and association may be endogenous to local library development, so this coefficient cannot be assumed to reflect causation.

From table 1 it is apparent that the five-thousand-volume threshold for inclusion in the data misses a large number of small public libraries, particularly in the earlier years of our sample. To check the robustness of our results to this truncation, we ran the panel regressions for the entire sample excluding 1913 (table 3, column 3), which permits us to use a three-thousand-volume threshold, and for the period 1875–1903 (column 4), for which we can include all libraries with at least one thousand volumes. These estimates suggest that the basic results are very similar whether the one-thousand-, three-thousand-, or five-thousand-volume threshold is used. The only notable inconsistency is that the large-city effect disappears in the sample restricted to 1875–1903, which may indicate that the city scale effect became more important after the turn of the century or that there simply were too few larger cities in the data for earlier years to estimate their impact.

An alternative measure of public library development would be the count of libraries per capita rather than volumes per capita. Because there were presumably economies of scale in the provision of library services, many communities may have expanded those services simply by increasing the size and holdings of a single library. For this reason, counts of libraries per capita may be less indicative of access to library services. We replicated the regression specifications reported above using per capita libraries as the dependent variable. The results, not reported here, are largely consistent with the results using volumes per capita. Notably, the proportion foreign-born as well as a state's experience with library associations or commissions continue to have positive coefficients, although not always statistically significant in this case. The proportion of the population over fifty-nine has again a significant negative impact. The South again increasingly falls behind the rest of the country in public library development. The measure of real property tax revenue per capita has a significantly negative coefficient. It could be that as states became wealthier they devoted their resources to expanding the scale of existing libraries rather than building more libraries, or it could be that increases in average local tax revenue were correlated with income distribution across members of communities in a way that skews the results. This discrepancy warrants further inquiry.

Conclusions

Public libraries are an enduring institutional legacy of the Progressive Era in the United States. Using data from detailed library surveys conducted by the US Bureau of Education, we have documented the pace of public library development between 1870 and 1930, a period of substantial growth and institutional change in local library services. Panel regressions using state-year data show that access to public library services, as measured by volumes per capita, was positively associated with the presence of immigrants, more towns and cities, and the presence of a state library commission or association.

A significant positive time trend in library development remains even after controlling for socioeconomic changes. This suggests more room for exploring how the rise in incomes of the late 1800s complemented a change in tastes toward more public expenditures on libraries. It may be that as books became less expensive, allowing more people to read fiction as a leisure activity, support for public libraries grew.

Finally, the factors captured by our explanatory variables do not explain the significant lag in public library development in the South relative to the rest of the country, a dubious distinction that echoes the region's lagging extension of primary and secondary education as well. It seems plausible that a major impediment to the development of public libraries in the heavily segregated South was fear that public funding of reading and access to information would shift the racial balance of power.⁵³ An important agenda for future research is to determine whether such fears were justified: Did access to public libraries change voting and political outcomes?

Notes

1. Haynes McMullen, *American Libraries before 1876* (Westport, CT: Greenwood Press, 2000).

2. The survey years included here are 1875, 1885, 1891, 1896, 1900, 1903, 1908, 1913, 1923, and 1929. Data on public libraries with at least one thousand volumes were available only through 1903. Data on libraries with at least three thousand volumes were unavailable for 1913, so the plots interpolate a straight line between 1903 and 1923 for those series.

3. Claudia Goldin, "America's Graduation from High School: The Evolution and Spread of Secondary Schooling in the Twentieth Century," *Journal of Economic History* 58 (1998): 345–74.

4. Although it might be natural to view high school education as a precursor to demand for library services, the timing suggests that library development was coincident or perhaps even prior to the spread of secondary education. Indeed,

a case could be made for a causal role of libraries in the high school movement. Andrew Carnegie's library philanthropy, for example, quite plausibly extended the reach of the public high school movement. Theodore Jones observed that "in many towns, Carnegie libraries were the only large public buildings, and they became hubs of social activities like concerts, lectures, and meetings and did double duty as museums and community storehouses" (*Carnegie Libraries across America: A Public Legacy* [Washington, DC: Preservation Press and John Wiley, 1997], 17). It is not unimaginable that they also served as catalysts for high schools.

5. John Colson, "The Public Library Movement in Wisconsin" (PhD diss., University of Chicago, 1973); Samuel Swett Green, *The Public Library Movement in the United States, 1853–1893. From 1876, Reminiscences of the Writer*, reprint of 1913 work (Boston: Gregg Press, 1972); William S. Learned, *The American Public Library and the Diffusion of Knowledge* (New York: Harcourt, Brace & Co., 1924); Lowell Arthur Martin, *Enrichment: A History of the Public Library in the United States in the Twentieth Century* (Lanham, MD: Scarecrow Press, 1998); McMullen, *American Libraries*; Paul Sturges, "The Public Library and Reading by the Masses: Historical Perspectives on the USA and Britain 1850–1900," 60th IFLA General Conference, Conference Proceedings, 1994; C. Seymour Thompson, *Evolution of the American Public Library, 1653–1876* (Washington, DC: Scarecrow Press, 1950).

6. Robert W. Williams, "Sources of the Variability in Level of Public Library Development in the United States: A Comparative Analysis," *Library Research* 2, no. 2 (1980): 157–76; Robert V. Williams, "Public Library Development in the United States, 1850–1870: An Empirical Analysis," *Journal of Library History* 21, no. 1 (1986): 177–201.

7. McMullen, *American Libraries*.

8. Details of the data are available in a data appendix from the authors (mkevene.com/libraries-us.htm).

9. United States Bureau of Education, *Public Libraries in the U.S., Their History, Condition, and Management, Special Report* (Washington, DC: Government Printing Office, 1876), xviii.

10. *Ibid.*

11. *Ibid.*, xix.

12. Although in some years the surveys asked whether the library's services were free or by subscription, and such information would be helpful in classifying libraries as public, a large number of libraries failed to respond to this question, and thus we cannot rely on the responses.

13. Indeed, the apparent differential between the three-thousand- and five-thousand-volume lines in figures 1 and 2 is exaggerated because data for the three-thousand-volume count are missing in 1913, so the plot draws a spuriously straight line between 1903 and 1923. Presumably, the plot for the five-thousand-volume threshold, with its acceleration after 1913, is more indicative of the actual pace of library development.

14. Arnold Borden, "The Sociological Beginnings of the Library Movement in America," *Library Quarterly* 1 (1931): 278–82; Jesse Hauk Shera, *Knowing Books and Men; Knowing Computers, Too* (Littleton, CO: Libraries Unlimited, 1973).

15. Robert Devore Leigh, *The Public Library in the United States: The General Report of the Public Library Inquiry* (New York: Columbia University Press, 1950); Shera, *Knowing Books and Men*; Lewis Steig, "Notes on the Origins of Public Libraries in California, 1850–1900," *Library Quarterly* 22 (1952): 263–69; Robert V.

Williams, "Theoretical Issues and Constructs Underlying the Study of Library Development," *Libri* 34, no. 1 (1984): 1–16; Robert V. Williams, "The Public Library as the Dependent Variable: Historically Oriented Theories and Hypotheses of Public Library Development," *Journal of Library History* 16, no. 2 (1981): 329–41.

16. Gwladys Spencer, *The Chicago Public Library: Origins and Background* (Chicago: University of Chicago Press, 1943), 389.

17. McMullen, *American Libraries*, 59.

18. Carleton Joeckel, *The Government of the American Public Library* (Chicago: University of Chicago Press, 1935); Shera, *Knowing Books and Men*.

19. McMullen, *American Libraries*, 123.

20. Claxton Helms, "The Development of Library Services in Allegan County, Michigan," in *Contributions to Mid-West Library History*, ed. Thelma Eaton (Champaign: Illini Union Bookstore, 1964), 115.

21. Joeckel, *Government*, 79.

22. *Ibid.*, 24.

23. George S. Bobinski, *Carnegie Libraries: Their History and Impact on American Public Library Development* (Chicago: American Library Association, 1969), 4.

24. Haynes McMullen, "The Distribution of Libraries throughout the United States," *Library Trends* 25 (1976): 23–53.

25. Thompson, *Evolution*; and Joeckel, *Government*, 13–14.

26. Colson, "The Public Library Movement"; Raymond Kilpela, "A Historical-Legal Review of Indiana Library Legislation," *Library Occurrent*, September 1964, 159–63.

27. Shannon Diane White, "The Development of the Statewide Tax-Supported Library System in Alabama: 1901–1974" (master's thesis, University of South Carolina, 1997).

28. Data on commission and association founding dates were derived from a variety of sources, including Bureau of Education reports, association and commission websites, and correspondence (see the data appendix, available from the authors).

29. Karen J. Blair, *The Clubwoman as Feminist: True Womanhood Redefined, 1868–1914* (New York: Holmes and Meier Publishers, 1980).

30. Elfrieda McCauley, "The New England Mill Girls: Feminine Influence in the Development of Public Libraries in New England" (PhD diss., Columbia University, 1971); Victoria Mussman, "Women and the Founding of Social Libraries in California, 1859–1910" (PhD diss., University of Southern California, 1982).

31. A. R. Gere, *Intimate Practices: Literacy and Cultural Work in U.S. Women's Clubs, 1880–1920* (Urbana: University of Illinois Press, 1997).

32. Paula Watson, "Carnegie Ladies, Lady Carnegies: Women and the Building of Libraries," *Libraries & Culture* 31, no. 1 (1996): 159–96.

33. Daniel Goldstein, "The Spirit of an Age: Iowa Public Libraries and Professional Librarians as Solutions to Society's Problems, 1890–1940," *Libraries & Culture* 38, no. 3 (2003): 214–35.

34. Lucy Deam Kortun, "Carnegie Library Development in California and the Architecture It Produced" (master's thesis, Sonoma State University, 1990), 1.

35. Daniel Akst, "Do Libraries Still Matter?," *Carnegie Reporter* 3, no. 2 (2005).

36. Green, *The Public Library Movement*.

37. James Wellard, *Book Selection: Its Principles and Practice* (London: Grafton & Co., 1937).

38. John Joseph Wallis, "American Government Finance in the Long Run: 1790 to 1990," *Journal of Economic Perspectives* 14, no. 1 (2000): 61–82.

39. Figures derived from *ibid.*, 65.

40. Joeckel (*Government*, 29) notes that the share of library operating expenses out of total municipal expenditures in American cities remained steady at about 1.3 percent between 1905 and 1930.

41. Goldin, "America's Graduation"; Peter Lindert, "The Rise of Social Spending, 1880–1930," *Explorations in Economic History* 31, no. 1 (1994): 1–37.

42. Claudia Goldin and Lawrence F. Katz, "Human Capital and Social Capital: The Rise of Secondary Schooling in America, 1910–1940," *Journal of Interdisciplinary History* 29, no. 4 (1999): 683–723.

43. Claudia Goldin and Lawrence F. Katz, "Mass Secondary Schooling and the State: The Role of State Compulsion in the High School Movement," in *Understanding Long-Run Economic Growth: Geography, Institutions, and the Knowledge Economy*, ed. Dora L. Costa and Naomi R. Lamoreaux (Chicago: University of Chicago Press, 2011), 275–310.

44. August William Steinhilber and Carl J. Sokolowski, *State Law on Compulsory Attendance* (Washington, DC: US Department of Health, Education and Welfare, Office of Education, 1966).

45. Plummer Alston Jones, Jr., *Libraries, Immigrants, and the American Experience* (Westport, CT: Greenwood Press, 1999); Elaine Fain, "Books for New Citizens: Public Libraries and Americanization Programs, 1900–1925," in *The Quest for Social Justice: The Morris Fromkin Memorial Lectures, 1970–1980*, ed. Ralph M. Aderman (Madison: University of Wisconsin Press, 1983), 255–76; Nelson R. Beck, "The Use of Library and Educational Facilities by Russian-Jewish Immigrants in New York City, 1880–1914: The Impact of Culture," *Journal of Library History* 12, no. 2 (1977): 128–49.

46. An example of empirical analysis finding negative effects of ethnic heterogeneity is Alberto Alesina, Reza Baqir, and William Easterly, "Public Goods and Ethnic Divisions," *Quarterly Journal of Economics* 114, no. 4 (1999): 1243–84.

47. Dora L. Costa and Matthew E. Kahn, "Civic Engagement and Community Heterogeneity: An Economist's Perspective," *Perspectives on Politics* 1, no. 1 (2003): 103–11.

48. Dee Garrison, *Apostles of Culture: The Public Librarian and American Society, 1876–1920* (New York: Free Press, 1979).

49. Martin, *Enrichment*; Sidney Ditzion, *Arsenals of a Democratic Culture* (Chicago: American Library Association, 1947).

50. Susan H. Swetman, "Pro–Carnegie Library Arguments and Contemporary Concerns in the Intermountain West," *Journal of the West* 30, no. 3 (1991): 63–68.

51. Goldin and Katz, "Human Capital."

52. A separate dummy variable for the South cannot be included because the region is already controlled for by the state fixed effects.

53. Patterson Toby Graham, *A Right to Read: Segregation and Civil Rights in Alabama's Public Libraries* (Tuscaloosa: University of Alabama Press, 2002); Cheryl Knott Malone, "Autonomy and Accommodation: Houston's Colored Carnegie Library, 1907–1922," *Libraries & Culture* 34, no. 2 (1999): 95–112.

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