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Assessing the Value of Public Library Services: A Review of the Literature and Meta-Analysis (META)

Dr. Jennifer Weil Arns
Principal Investigator

Dr. Robert Williams
Ms. Karen Miller
Project Contributors

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School of Library and
Information Science
University of South Carolina

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Introduction

Looking for Value in All the Right Places

As Robert Behn indicates, there are many reasons to measure organizational performance. They typically begin with two basic questions: is my organization doing what it is intended to do and is my organization doing what it is intended to do well? Beyond this point, performance assessments can be used to guide the allocation of funds, motivate and direct employees, identify needs for improvement, and foster organizational culture. In the public sphere, perhaps even more importantly, performance measures are also powerful tools for communicating programmatic value and accomplishments to stakeholders and constituents.

In the case of public libraries, programmatic value and the contributions public libraries may be expected to make to the lives of those who live in the communities they serve are often readily apparent. The demand for their products and services is strong and rising. They are currently visited over a billion times a year, and they circulate two and one half billion items annually. People typically speak positively about their public libraries. They take pride in the presence of their library buildings and provide long hours of volunteer services on their boards and governing bodies.

Characterizing the economic value of these services has proved more challenging. Over the past several years, the importance of these assessments and the measurements needed to produce them have been recurring themes in public library discourse. Arguments made by Glen Holt and Donald Elliott have figured prominently among these themes. The Americans for Libraries Council has pointed to the importance of economic valuation, as have The Urban Libraries Council, The Online Computer Library Center (OCLC), several state libraries, and many practitioners. In response, there are now a good number of studies that have used a variety of approaches to assess the economic contributions that public libraries have made. Less progress has been made concerning the expected magnitude or consistency of these estimates.

The IMLS sponsored project described in this publication approaches these questions from more than one perspective. The first chapter focuses on the original objects to be obtained through public library service and traces the social and economic currents that modified and expanded these familiar images. The next chapter looks at public libraries from an economic perspective and points to the strengths and weaknesses of the techniques that have been used to augment traditional images with measurements characterizing the contributions of public libraries from a monetary, economic perspective. The following chapter provides a detailed and scholarly description of the steps the META project used to arrive at its major conclusion: that American communities can typically expect to receive five to six dollars of benefits for every dollar they spend on public library services. Because there is a strong likelihood that this estimate undervalues public library services, that chapter also contains suggestions for providing a more holistic assessment approach that leverages the rich imagery still associated with today's public libraries and the original objects obtained through public library services.

As a whole, the ideas and results presented in this publication are intended to provide resources that will be useful to those who staff busy public libraries and wish to add depth to their current advocacy arguments. The results provide a persuasive platform for public value considerations, and the appendices suggest the possibility of modifying these numbers to highlight local contributions. Both strategies are likely to be useful when combined with tried and true arguments, especially now that advocates who arrive at meetings holding a single card, whether economic or traditional, are likely to encounter substantial difficulties.

Chapter 1
AN HISTORIC PERSPECTIVE

The Initial Public Library Argument

In the 1850s, America's northeastern seacoast cities were by and large enjoying a highpoint; they were relatively prosperous, increasingly urbane and cosmopolitan, buoyed by the successes of industrial growth, and fortified with a rapidly expanding population base that consisted to a large extent of immigrant laborers. It was a period of optimism and confidence in the core values of democracy, and it was a time of progressive impulse, marked by the educational reforms of Horace Mann and the works of transcendental authors. Despite rumblings from the agricultural south, a spirit of hope and advancement animated much of the populace.

Most public library historians also point to this period when they speak of the key events of the early public library movement, including "the objects to be attained by the establishment of a Public Library" outlined in the *Report of the Trustees of the Public Library of the City of Boston* submitted in 1852 to the Boston City Council concerning the desirability of establishing a public library (*Report of the Trustees*, 1852). The image it provides — that of a classical good and an icon of literacy and learning, civic pride, and prosperity — has since proved to be seminal, establishing a set of symbolic virtues or existential raisons d'être that are replicated in the mission statements of today's public libraries.

The link between writing, literacy, and the cultural achievements of classical antiquity is one of the most notable aspects of the *Report*. It is quite clear when the Trustees tell us that, "We know from history that only those portions of the human family have made considerable and permanent progress in civilization, which have possessed and used this great instrument of improvement[,writing]." They continue to make this point when they suggest that:

> ***It is principally in the form of books that the art of writing . . . has exerted its influence on human progress. It is almost exclusively through books that a permanent record has been made of word and deed, of thought and feeling; that history, philosophy and poetry, that literature and science in their full comprehension, have been called into being, by the cooperation of intellects acting in concert with each other . . .***

The connection to public library value is found in the phrase "cooperation of intellects acting in concert with each other." From this perspective, learning and progress require social intercourse and the concerted intellectual effort that occurs in educational settings, accompanies debate, and naturally results when readers encounter challenging ideas and consider opposing opinions. Shared reading is the bedrock of these transformative experiences, and given that Boston had already embarked on a new public education system that could "probably sustain comparison to any in the world, " the next step — a publicly available repository of learning — was the obvious point of the following rhetorical question:

> ***Why should not this prosperous and liberal city extend some reasonable amount of aid to the foundation and support of a noble public library, to which the young people of both sexes, when they leave the schools, can resort for those works which pertain to general culture, or which are needful for research into any branch of useful knowledge?***

The Trustees' answer is an encouraging image that speaks to the cultural advancement of the community as a whole by providing the benefits of literature and scholarship to the men and women of Boston. The objects to be obtained acquire symbolic force in this argument; and over the next few decades, these images became the essential elements in the argument that Shera (1949) considers the first real credo of the public library: civic pride, economic prosperity, education, advancement, and opportunities for collective growth.

As the nineteenth century moved onward, these images persisted. However, they also subtly shifted as public libraries came to be seen in a different era as the home of the new recently arrived

immigrant, the speculator, and the school-girl. Justin Winsor (1881) reflects on these developments in a captivating image in his 1881 American Library Association Presidential Address when he tells his colleagues that he sometimes thinks of the public library as "a derrick, lifting the inert masses and swinging them round to the sure foundations upon which the national character shall rise" (p. 63). One year later, in a presentation at another American Library Association meeting, Larned tells his colleagues that, "The public library is no longer the sequestered academic retreat of a studious few; it is the common town-school of the inquisitive" (Larned, 1882, p. 126).

Real and Permanent Good

In the coming years, this imagery found an unlikely ally in a transplanted Scottish immigrant and self-made millionaire. While aspects of Carnegie's motives can be debated (Harris, 1973), Carnegie's writing (1889) clearly describes public libraries as places of learning that stand rightfully beside public schools. Speaking as a businessman, he very specifically ties public libraries to the prosperity of the communities in which they are located when he asks and answers the following question:

> ***What is the best gift which can be given to a community? . . . a free library occupies that first place, provided the community will accept and maintain it as a public institution, as much a part of the city prosperity as its public schools, and, indeed, an adjunct to these.***

Like the solid men of Boston, Carnegie was a man of his era. His ideas concerning the benefits that could be obtained from public library service are presented in straight forward language and situated in a period when activities related to relief for and education of the poor were drifting from the purview of individuals to the responsibility of social agencies. The rhetoric of this period had also begun

to focus more pointedly on the poor and the new immigrant populations, who were considered simultaneously vulnerable to the dangers of depravity and capable of personal, moral, and social transformation despite the oppressive business practices of the era.

Larned's 1894 American Library Association Presidential Address provides another example of the value perceptions that characterized this period. Written two years after the Homestead Steel strike and its violent confrontations, Larned's words provoke images of an endangered democracy and the harm that can result from mischievous thinking in an increasingly pluralistic society. He sees public libraries in much the same way as those who came before him: bastions of tradition, instruments of order, and sources of democratic principles. However, the context of his remarks is quite different, and the level of alarm with which he approaches his topic is heightened in comparison to his predecessors' mid-century reflections:

> ***Eighteen years ago, the conception of the Library militant, of the Library as a moving force in the world, of the Librarian as a missionary of literature, was one which a few men only had grasped but with which those few had already begun the doing of a revolutionary work. To-day such ideals are being realized in most corners of the American republic. The last generation, and the generations before the last, were satisfied with the school as an agent of popular education. In our time we have brought the library to the help of the school, and the world is just opening its eyes to perceive the enormous value of the reinforcement that is gained from this new power.*** (Larned, 1894, p. 1).

Written four years later, Putnam's (1898, p. 671) words echo these observations. The world he describes is very different from the world in which public librarianship was initially imagined; and like Larned, he believes that the public libraries of his period are uniquely positioned and duty-bound to function as valued instruments of acculturation and education:

> ***They have a profound duty—not generally appreciated—to help render homogeneous the very heterogeneous elements of our population. Thirty percent of it has come to us from an alien life and alien institutions. One-third of the people in our six leading cities are of foreign birth; seventy-one per cent were either born abroad or born of foreign parentage. In the assimilation of this foreign element no single agency is perhaps so***

> ***potent as our public libraries. The public libraries deem themselves the allies of formal educational processes; but also the direct educators of that part of the community not subject to the formal processes. It is this latter responsibility which has led them to attempt a broader service than the mere supply of books.***

Although, from a contemporary perspective, the images of this late nineteenth century period may appear somewhat ambivalent, marked on one hand by social activism and on the other by xenophobia, they reflect their time. In terms of public library value, they remain in some respects quite similar to the writing that precedes them. In other respects, they provide a new and less passive image of public library benefits that "begins with the citizen earlier than was foreseen, [and] is prepared to accompany him further than was thought necessary" (Putnam, 1898, p. 662).

Other familiar images emerge at this time. The value of leisure pursuits is more generally acknowledged. We see collections that provide books intended for purely recreational reasons, a service that Putnam tells us "if anticipated, was certainly not explicitly argued for; nor was it implied in Edward Everett's prediction that the public library would prove the 'intellectual common' of the community" (p. 663). Lastly, we see growing numbers of buildings, each becoming a visible symbol of the artifacts within them and a source of material value where they are located.

The Mind and Soul of Their Communities

As the progressive movement gained momentum in the early twentieth century, the value of public library buildings became more obvious, and many of those who worked in them gained additional stature through the relationships they built within their communities. Lutie E. Stearns typically encouraged this practice in 1911, when she urged public libraries to be "quick to realize that the social centre offers a most excellent opportunity to reach those that might not otherwise take the time to avail themselves of library privileges." She also noted that "the free public library should be made an important part of social centre work through active and sympathetic cooperation" (Stearns, 1911, p. 84). The same image appears when Margery C. Quigley (1917, p. 443) speaks of the St. Louis Public Library as "a place where neighbors meet"; and it is clearly evident in the active work and words of Ernestine Rose, who pioneered public library services to immigrants (Rose, 1917) and later guided the Harlem Branch of the New York Public Library in the early part of the twentieth century as it became an extraordinary community center (Tibbets, 1989).

Taken together, these images propelled early twentieth century practice arguments. Fundamental nineteenth century virtues were still in place, but they were now explicitly accompanied by community and institutionally defined value. The morally charged language of personal betterment somewhat receded; and innovative thinkers began to conceptualize the public library as perhaps the "one institution, neutral, unbiased, without dogma, where all beliefs, creeds, ages, and races may meet (Rose, 1917, p. 12). The public library of this period is still portrayed as a source of social stability that furthers personal aims and communal prosperity; but the knowledge libraries contained was more accessible because classified, more usable because protected within a building, and more important because of the civic spaces where the intercourse required for debate and shared learning could take place.

The tensions that surrounded these images from the early twentieth century forward tended to arise from competing interpretations, rather than disagreements concerning importance. With the advent of World War I, contentious debates reflecting competing notions of democratic ideals became common, but the importance of democratic ideals remained constant. The concepts of Intellectual freedom gained new professional and public attention (Stielow, 1983), and as these principles did not rest comfortably with the inclinations of the entire public or the public library leadership (Robbins, 1996), some librarians defended these values vigorously while others chose to maintain a more protective stance. Both viewpoints continued to inform practice through the turbulent years of World War II, McCarthyism, the civil rights movement, the Vietnam War, and the Watergate affair (Fiske, 1959; Lincove, 1994; Wiegand, 2005; Samek, 1996; Josey, 1987); and it was sometime during these harrowing periods that the American Library Association "traveled from a fledgling assertion of its autonomy and of the social role of the library as articulated in the Library's Bill of Rights to a stance of being 'ready, willing, and able' to come to the defense of librarians who had lost their positions in censorship battles" (Robbins, 1996, p. 157).

The Library Faith and the Problem of Measurement

As a raison d'être and statement of faith, all of these images remain compelling. The nineteenth and twentieth century arguments for public library service resound today, and the perpetuation of public libraries and their services has rested on this core of subtly shifting images for well over a century. Today's public Library, like those of the past, is valued as an extension of formal education; road to self-

improvement; means of social, intellectual, and moral advancement; agent of socialization; well spring of democracy; component in community formation and stabilization; and guardian of intellectual freedom and equity of access. Taken together or individually, these inherent values clearly suggest meaningful individual and community benefits ranging from sustenance of the spirit to economic advantage.

The problem is one of measurement. As Garceau noted, by the late in 1940's, these images constituted "a fundamental belief" that was generally accepted and often assumed (Garceau, 1949, p. 70). In many instances, intuitive judgments concerning the goodness of libraries were adequate to assure public approval and even occasionally generous funding.

In others, imaginative presentations and impressive rhetoric were persuasive and sufficient to assure continuity. In today's increasingly quantitative world, they have become less persuasive. Comparable metrics speaking to the needs of policy makers held accountable for balancing the needs of competing constituencies and equitably apportioning public funds have become part of the value equation.

Chapter 2
Economic Frameworks and Perspectives

The Question of Library Goodness

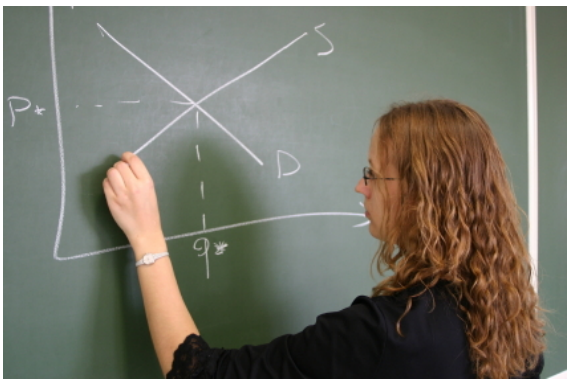
Characterizing public services using comparable metrics continues to be a challenging endeavor, especially in environments marked by intensifying competition for public funds and market position. In the case of public libraries, many of their societal contributions are easily observed. The demand for story hours is strong. Circulation appears to be rising (*IMLS*, 2011, p. 5). In the eyes of many, Garceau's "library faith" remains robust and should not be discounted, but there is less surety in terms of economic measures. A good number of public library valuation studies have been completed. Taken together, they comprise a growing body of literature that advances our ability to express the value of public libraries in comparable economic units.

The next steps, pausing to take stock of these studies, understanding what they tell us as a whole, and assessing the meaning of their variation require meaningful synthesis.

Orr's mid-twentieth century work suggests two points of departure (Orr, p. 317). The first, effectiveness, addresses the question, "How good is the service?" The second addresses the question, "How much good does it do?" The first of these questions is the easier, and Orr suggests using the type of quantitative data that libraries typically collect to answer this question with an interesting economic twist that looks at the increases that might be expected as additional revenue units are added. On the more difficult question of value, he extends this idea suggesting the use of a value system based on the contribution that a library makes to the objectives of the library's parent institution. He continues, noting that, in theory, experiments could be designed that measure how the value realized from a particular service varies in relation to changes in quality or support levels.

Writing a decade later, Buckland (1982) refers to Orr's two questions and notes that Orr's assessments tend to be related to capability — those things which a library has the potential to accomplish. The problem he next raises is one of utility. If the resources and potential benefits of a library are irrelevant to the community in which it is located, is a powerful library still a good one? A second question is posed in terms of library expenditures. If capacity is an appropriate measure, at what

point is capacity optimal? Buckland answers this question using the economic concepts of opportunity costs and marginal utility. Additions to a library's collections are desirable "as long as the benefit to be derived from the next dollar to be spent on books is less than the benefit to the city of the next dollar to be spent on road repairs" (p.66). The basis to be used for these comparisons has proved to be the knottiest aspect of this problem. The question is fundamentally unanswerable without a way to characterize disparate accomplishments using a single term or common denominator.



While many such measures are available, few are as convenient to use and widely applicable as monetary units. From the viewpoint of social exchange theory and despite inflationary cycles, dollars remain widely recognized and accepted measures of value in U. S. communities. Policymakers are comfortable using these metrics, but they also raise a number of problems.

The Public Library as an Economic Entity

Characterizing public libraries as economic entities is complicated by several factors. The first is the lack of a market that explicitly demonstrates the price that people are willing to pay for library goods and services. In terms of economic theory, this number is characterized as the point, or price, at which production levels match the demand for goods and services of interest. This equilibrium price is typically influenced by three factors. The first, consumer preference, explains why a person might prefer one good or service to another. The second, budget constraints, recognizes that purchasers have limited funds. The third, consumer choice, suggests that purchasers will try to optimize their decisions (Pindyck & Rubenfeld, 1989).

Goods that are not exchanged in this manner are often referred to as *non-market* and *public* goods, and although public libraries are not in themselves *public goods*, the information they provide generally approaches this definition from an economics standpoint. In most cases, information, like the light that flows from a fireworks display, is not depleted as it is consumed. Nor does its use by one person necessarily preclude its use by another. A strong argument can also be made for regarding public library

services as *merit goods*; *e.g*., *services* that merit public support, despite uneven utility perceptions, due to their contribution to overall social wellbeing and their importance to those who would be unable to meet market prices (Musgrave, 1959; Case, 2008). There is also an historical and political explanation for the placement of community libraries within the public sector — the belief that certain educational institutions, such as libraries and schools, are of sufficient cultural importance that they should be guarded from the threat of market fluctuations and financial failures (Joeckel, 1935; Garceau, 1949; Foster, 1997). Over time, this position has proved to be fortuitous, but it also deprives public libraries of the benefits of a market that directly demonstrates comparable monetary values. Cost-benefit analysis, an analytic framework often used to evaluate the desirability of public expenditures (Stokey & Zeckhauser, p. 134), addresses this problem in a manner intended to maximize overall welfare and enhance the transparency of public decision making (Adler & Posner, 2006, pp. 25, 185; MacLean, 1998, p. 108).

Although there are several ways to perform cost-benefit calculations (Linn, 2011), the basic process involves identifying, quantifying, and comparing a group of costs and benefits in order to determine the net benefit (or cost) of an initiative or investment. These calculations become more complex when the results of a decision are not confined to the original beneficiary or those who participate in the original transaction (Cornes & Sandler 1996); however, cost-benefit techniques have been used for several decades to improve resource allocation and clarify decisions ranging from medical procedures to natural habitat protection (Fuguitt & Wilcox, 1999).

The accuracy and usefulness of the calculations depend on the answers to a number of important questions (Stokey & Zeckhauser, p. 136). The first question is, what are the boundaries of the service or project under consideration? When these boundaries are relatively well defined, as in the case of extending existing city water service to a three block area, this aspect of the calculation can be fairly straightforward.

The more amorphous the project or service under consideration, the more difficult the cost-benefit analyses becomes. A second question relates to the impacts that should be included in the cost and benefit calculations. What group of people, objects, or interests will be affected by the policy or investment decision and which of these impacts should be represented in the cost-benefit calculations? A third question relates to the way that these effects will be represented and the assignment of values. How do we measure the improvements that occur when a public water supply becomes available? When more people can read?

In the case of public libraries, service areas are usually fairly well defined and cost data is typically captured using accounting and reporting records. Identifying benefits is more problematic and needs to be examined from at least two perspectives. The first perspective, direct benefits, are the initial and immediate result of the provision of a good or service to an individual or recognized population. The second, indirect benefits, tends to be approached from a variety of perspectives, including the wider personal, regional, or community impact of a decision under consideration.

Assigning values remains one of the most difficult aspects of cost-benefit analysis (Stokey & Zeckhauser, 1978, p. 149). In some cases, a market proxy is available. In others, contingent valuation surveys can be used to elicit value perceptions, and regional industrial data can be used to create indirect estimates. However, each of these techniques has limitations, and neither provides a ready avenue for valuing the intangible goods and services that figure prominently in the minds of many Americans. Important benefits, such as democratic spirit and lifelong learning, often need to be expressed using complex constructs and symbols; and in many cases they are difficult to quantify and include in value calculations (p. 153).

Cost-Benefit Studies: Problems and Progress

Despite these problems, cost-benefit calculations are often used to provide a *lingua franca* that helps policy makers consider the likely costs, benefits, and relative merits of diverse and competing public investment strategies. From Orr's viewpoint, the cost benefit framework could be considered a variation of question 1: How good are we doing? In this instance, *good* is operationalized using the construct *effectiveness,* which in turn is explored from the viewpoint of frugality and efficiency. At the organizational level, improvements can be achieved in one of three ways: maintaining or improving services in times of declining resources, improving services during periods of steady resources, or increasing services at a rate that is faster than the rate that resources are increasing. Assessments such as these can be used to compare performance of an organization over time or identify value centers that merit further attention.

Early studies in Cleveland, Ohio; Hawaii; and Indiana (Pfister & Milliman, 1970, pp. 41, 134; Goddard 1971) identified education as the primary benefit provided by public libraries, but made little

initial progress in terms of quantitative measures of library benefits. The first published cost-benefit analysis of public libraries appears to have been a 1970 report of Indiana libraries (Pfister & Milliman, 1970) that was characterized as an "experimental and exploratory attempt." Determining that information about public library use was "woefully inadequate" to perform "good cost-benefit analysis," the authors attempted a "crude" measure of costs and benefits based on circulation estimates. Total operating costs divided by total circulation yielded a per capita cost of $3.87. When compared to costs from a rental library, median adult fiction circulation benefits were 25¢. A 1974 cost-benefit study of bookmobile service affirmed the difficulty of measuring library benefits (Hu, et al., 1975, p. 22).

A few years later, Braunstein's (1979) study looked at costs and benefits from a different perspective: the context of the individual user. Within this framework, several factors were thought to influence user behavior, including time (an opportunity cost), library convenience and efficiency, and the efficiency with which the user is able to communicate needs or use the library collections. Benefits arise from free access to library material. Completing the equation, libraries incur the costs of delivering material and other users incur time-related opportunity costs while waiting for service.

Upon reflection, Braunstein (1979) pointed to two shortcomings in this type of analysis. The first is the absence of additional, but difficult to quantify, user benefit measures, such as the availability, currency, and reliability of information. The second shortcoming had to do with the trend towards the integration of multiple services and the extent to which these developments complicated cost benefit analysis from the individual user perspective.

Five years later, White published a scathing opinion piece criticizing cost benefit analysis as "mischievous and pointless" (White, 1985, p. 119). White's objections to cost-benefit analysis included bias in user survey responses, lack of a control group to test the presence or absence of a library service, and analysts' poor understanding of alternative services.

Although many of these problems have proved persistent, the interest in measures that characterize the benefits of public library services in economic terms has intensified rather than abated. Substantial progress began in 1994, when Holt and Elliott, among others, began a service valuation study of the St. Louis Public Library (SLPL) with funding support from The Public Library Association (PLA) and The Institute of Museum and Library Services (IMLS). After refining the methodology in 1997, the

project team replicated the St. Louis study and expanded the study to four additional large public libraries located in Maryland, Alabama, Washington, and Arizona (Holt & Elliott, 2000). Further refinement of the methodology led to a 2001 through 2003 study of nine medium and smaller-sized public libraries and the creation of a cost-benefit analysis manual for libraries of that size (Holt, et al., 2005). Synthesis of the ten years of cost-benefit studies culminated in the book, *Measuring Your Library's Value: How to Do a Cost-Benefit Analysis for Your Public Library* (Elliott, et al., 2007).

Building on work originally performed by McClure, Fraser, Nelson, and Robbins (2001), the State of Florida's 2004 report on the economic benefits of public library service also provides an important example of cost benefit calculations. Undertaken in response to a climate of strained budgets and pressures for increased accountability and transparency, the study was intended to "provide a clear and accurate account" of the public money allocated to library services and the benefits that resulted from those expenditures (Griffiths et al., 2004, p. 3).

Drawing upon a variety of estimation techniques, the study concluded that Florida's public libraries returned $6.54 for every dollar expended on library services. The report also indicated that Florida's public libraries produced a ripple effect that resulted in a four billion dollar increase in the state's gross regional product.

The *Economic Impact of Libraries in South Carolina* study (Barron et al., 2005), conducted as a service to the South Carolina (SC) State Library, provides a different example of cost-benefit calculations. In this case, cost and benefit estimates were developed using a business model and standardized Public Library Survey income and expenditure data provided annually to the SC State Library. Cost calculations were based on expenditure data and equivalent private sector prices. Benefits were estimated using a similar approach, and both direct and indirect benefits were reported. As in the case of the Florida report, the South Carolina study also considered non-monetary types of benefits and included a methodology section that discussed the problems associated with pricing non-market goods. Both reports stress the complexity associated with this type of calculation.

A number of states have initiated similar projects. *The Taxpayer Return-on Investment (ROI) in Pennsylvania Public Libraries* (Griffiths et al., 2006, p. 10), conducted for the Commonwealth of Pennsylvania, Office of Commonwealth Libraries, serves as an example. Using multiple approaches, the

authors report that the Pennsylvania taxpayers of that period were receiving a 5.5 to 1 return on their investment. A 2007 Indiana Business Research Center report approaches the question from a different direction. Undertaken at the request of the Indiana State Library, the report argues for the importance of public library services in an environment where reductions in the size of the public sector were becoming increasingly common. The report suggested a direct return on investments in both public and academic libraries of approximately $2.38 for each dollar of costs incurred (*Indiana Business*, 2007, p. 5). More recently, the Vermont State Library used the South Carolina Study methodology to explore the economic value or impact of public libraries in Vermont. Their results indicate a total return on investment of approximately $7.26 for every $1 expended on the state's public libraries by state and local governments (*State of Vermont*, 2008, p.9).

Reporting the results of a wide-ranging examination of the contributions that the San Francisco Public Library (SFPL) makes to its city, a report funded by the SFPL Friends Group estimated that for every dollar spent supporting their library, the citizens of San Francisco see a return in the range of $1.40 to $3.34 (Berk & Associates, 2007, 49). Capturing the mood of many recession weary communities, a more recent report exploring the economic benefits that accrue from the many services provided by the Charlotte Mecklenburg Public Library makes a similar case for the importance of public libraries and their value to the community, suggesting that a range of $4.61 to $6.03 of benefits accrue from a dollar spent by local residents (*University of North Carolina*, 2010, p. 10).

Given the current fiscal climate, cost benefit studies such as these are likely to continue to be undertaken and used to help make the case for public libraries. As noted earlier, this process can be relatively straightforward when benefits are easily quantifiable in standardized or recognizable monetary units. The process becomes significantly more difficult when costs are not consistently defined, and benefits are complex and intangible.

Direct Benefits: The User's Perspective

Contingent valuation analysis (CVA) provides an attractive, if questionable, solution to these knotty problems. It is a fairly well-known approach to estimating the value of non-market and intangible goods and services when easily recognizable or standardized monetary units are unavailable. In the case of the public library studies we reviewed, two principal CV methods, "willingness to pay" (WTP) and "willingness to accept" (WTA) were used. The WTP method asks survey respondents how much they would be willing to pay for a library service they do not currently have. The WTA method asks respondents how much money they would accept to give up a library service they currently have.

In both cases, most of the studies employed some type of sampling of users (and, occasionally, non-users) for selecting survey respondents. The subjects included library card holders, people using the library or a specific library service at a given time, non-library users, and a random sample of members of the community. Some researchers used an approach that stratifies users based on some desired criterion, such as educators, school children, or business owners in order to gain more specific information on how these groups value library services. In many of these cases, the non-random sampling procedures problematically create validity and reliability problems. Although researchers studying the benefits, or value, of library services have used both approaches, several feel that WTA overestimates value and is less reliable; consequently, the tendency has been to favor WTP studies (Elliot, et. al., 2007).

The questions addressed to WTP respondents have also varied considerably. Some have been general, such as the following example supplied by Elliot, et. al. (2007, p. 22): "Suppose that no libraries had ever existed and taxes for libraries had never existed. How many dollars of taxes or fees would your

household be willing to pay annually to create and maintain your library as it exists today?" Others have been specific to a particular service, such as borrowing a book, video, or use of reference services. Disaster scenarios have been used to allow respondents to indicate how much they would be willing to pay to rebuild a library and restore services. Similar questions ask how much a respondent would be willing to spend if they had to replace specific library services such as children's books and programs, library computer usage and classes, help provided by library staff, and magazines and newspapers. Comparative questions, an alternative to the disaster scenario, ask how much the household currently spends on books, videos, CDs, etc. from commercial sources as well as how much they used these services at the library.

A related CVA technique, known as the referendum approach, was used by Hider (2008) in his study of Wagga Wagga City Library in Australia. This technique uses a "bid" system where respondents are provided a scenario in which the city council is holding a referendum on the future of the library and they are given several choices of bids on how much the household is willing to pay to support the library. The value of this approach is that it provides a "demand curve" that helps in assessing the total value of the library as seen by the "bidders."

Another closely related technique, the revealed preference method (RPM) relies on observational studies of what people actually do in a market situation, such as purchasing books or magazines, information services, and related services, to extrapolate from these behaviors the value of library services. The key issue here is the proper valuation (e.g., should one use new book prices or used book prices?) of the goods and services. Further complicating use of this method is the problem of how to value specific sub-services in libraries which often do not have market parallels. Kim (2011) summarizes studies that have used the RPM method, sometimes in conjunction with a CVA approach.

While useful, contingent valuation analysis is not without its critics. Several among these contend that survey respondents are often not familiar enough with non-market goods (such as library services) to reliably estimate their value. (Indiana Business Research Center, 2007, p. 10). Speaking more specifically of public libraries, Elliot et al. point similarly to the potential impact of *protest votes*, which occur when respondents either do not have the background needed to

provide a value estimate or refuse to do so because they do not accept a survey scenario. W*arm glow* effects have the opposite result, and Chung (2008) devotes considerable attention to these problems, using dissonance minimizing and information bias minimizing techniques that give respondents more information about their valuation options. Lee, Chung, and Jung (2010) provide additional suggestions.

Other critics suggest that CVA surveys are inordinately expensive to conduct, and it is important to remember that most perceptions tend to be temporal and contextual (Rothbard, 1956), meaning that individual value judgments can change from day to day and situation to situation. Aabø and Strand (2004, p. 372) speak to these points in the concise summary below:

> ***The main strength of the CV method is its directness. It seeks to elicit the value of the non-market good directly, without any detour, by asking individuals to express their valuation in a hypothetical market. The method's weaknesses are the possibility of strategic manipulation, the lack of familiarity with the choice situation, and (usually) the lack of formal commitment to the stated values in terms of actual payment.***

The authors of all of the twenty-three CVA reports reviewed for this study emphasize the difficulties of building a convincing scenario for a CVA study and offer cautions about the fact that library users are often unaware of the details of how their library is funded and the cost of operating the library overall or for a particular service. No two studies are completely alike, but all of them use CVA methodology for deriving a cost-benefit figure for the library or libraries studied. Some also calculate a return on investment (ROI) using a cost-benefit analysis approach. Random sampling procedures for selecting survey respondents are sometimes used, but non-random sampling has also been used in some of the studies. WTP approaches predominate, but WTA has not been completely abandoned, even in recent studies.

Researchers examining the CVA literature used to value libraries and library services will find that the method has typically been used for single libraries, a county or city system of libraries, a geographical region of a state, and a state-wide system of libraries—all without much consideration of differences in purposes, survey methodology, sampling design, and how these differences impact results and implications. The few researchers who have examined these issues across several studies tend not to be very interested in examining the implications of these differences, concentrating instead on how the CVA survey method itself can be improved.

Orr's Second Question: What Good Are We Doing?

Of the two questions posed by Orr many years ago, this is the more difficult to answer. The number of constructs that can be used to operationalize "good" is large and highly contextual. The unit of analysis can range from an individual to a nation; and in each of these cases, a wide and sometimes conflicting choice of metrics or indicators is available.

Among the studies we reviewed, several chose to address this issue using economic models, including the Bureau of Economic Analysis (BEA) Regional Input-Output Modeling System (RIMS II). According to the BEA, the data in the RIMS tables are derived mainly from two sources (U.S. Department of Commerce, 1997, p. 1). The first, the BEA national I-O (input-output) table, indicates the input and output structure of nearly 500 United States industries. The second table uses BEA's regional economic accounts to adjust the national I-O table in order to reflect a region's industrial structure and trading patterns (p. 3). Software for the modeling process is available from the BEA, and versions of it have been used to estimate and forecast the economic impact of a wide variety of policy proposals and decisions, such as military base closings, airport construction projects, and shopping mall constructions (p.1).

In the studies performed for the Suffolk County Public Libraries, the RIMS II input-output tables were tailored to Long Island industries, and Industry-specific multipliers related to economic output, earnings, and employment were used to determine the effects of each dollar spent by Suffolk County libraries on the regional economy (Kamer, 2005, p. 5). The results of the analysis indicated that the 2003 Suffolk County library aggregate expenditures (operating and capital) expanded Long Island economic output by a net $117 million, increased Long Island wages by $50 million, and added 1,200 jobs to the regional economy (p. 11; see also Kamer, 2006; Imholz & Arns, 2007, pp. 19-20, 44-51). While the largest effects of public library expenditures were concentrated in service industries, "virtually all" Long Island industries benefited.

Griffiths, et al. (2004) report similar results in their assessment of the taxpayer return on investment provided by Florida's public libraries (p.1). The calculations conducted by the Center for Economic Forecasting and Analysis at the University of Florida using another economic analysis modeling program (REMI) suggested that one job was created by every $6,448 in public funds spent on public libraries. The analysis also yielded gross regional product increases of $9.08 and wage increases of

$12.66 for each $1 of public library support (Griffiths, et al, 2004, p. 6; Griffiths, et al., 2005, pp. 4-6). Unlike RIMS II, REMI also provides estimates of future economic effects.

When the possibility of redistributing the money invested in public libraries to alternative government spending activities was projected over the next 32 years, the results indicated the state economy would suffer in a net decline of $5.6 billion in wages and the loss of 68,700 jobs (p. ii.)

Pooley, et al. (2010), updated the Florida study using 2008 data and a new version of REMI that extended the economic effects to non-library users and input-output analysis to the county level. The new study concluded that one job is created by each $3,491 spent on public libraries and that $1 of public support for libraries results in a gross regional product increase of $22.97. The modeling also suggested that elimination of Florida public libraries and reallocation of those funds to other government agencies would result in a net decline in wages $15.2 billion and result in the loss of 189,500 jobs between 2008 and 2040 (p. 3). REMI was also used in a study of Pennsylvania libraries, where the net economic effects of public libraries were found to increase gross regional product by $3.14 per $1.00 of public library funding (Griffiths, et al., 2006, p. 11).

A third input-output modeling program, IMPLAN, was used in a study of the construction and operational economic impact of the Carnegie Library of Pittsburgh in 2004 (*Carnegie*, 2006, pp. 34-36). The analysis indicated that when the branch renovations were completed, the library could be expected to support more than 400 direct jobs and 726 total jobs as well as more than $63 million in economic output in Allegheny County (p. 7). IMPLAN was also used in a 2008 study of Wisconsin public libraries, where the economic effects of 2006 library expenditures exceeded $326 million and supported 3,058 non-library jobs (Northstar Economics, 2008, pp. 20-21). While not identifying a specific model, a 2007 study of Indiana public libraries used input-output analysis to determine that library expenditures result in $215.8 million of additional economic activity and support approximately 2,000 non-library jobs (*Indiana*, 2007, p. 21).

Instead of using modeling software, the South Carolina studies used an economic multiplier to estimate the indirect value of in-state expenditures. The multiplier was developed from an estimate used by economists at the Darla Moore School of Business at the University of South Carolina: about $.36 is retained in the local/regional economy for every $1.00 spent (for wages, capital expenditures,

etc.). When third, fourth, and subsequent level impacts were considered, the figure rose to about $.637 for every $1.00 spent. Based on these calculations, the researchers concluded that $1 of state and local government expenditures on public libraries yielded $1.62 of indirect economic effect (Barron et al., 2005, p. 61). The State of Vermont used the South Carolina methodology in the studies of Vermont public libraries, which yielded economic benefits of $1.91 for each $1 spent in 2005 to 2006 (State of Vermont, 2007, p. 12) and $1.90 for each $1 spent in 2006 to 2007 (State of Vermont, 2008, p. 6). The SC methodology was also adopted in a 2010 study of the Charlotte Mecklenburg Library, yielding a result for 2009 expenditures of $1.46 of indirect economic effects for each $1 spent (*University of North Carolina*, 2010, p. 50).

Two other categories of benefit calculations figured occasionally in the studies reviewed for this project. The first, a *halo effect* (Leuthesser, Chiranjeev, Kohli, & Harich, 1995; Thorndike, 1920), appears in the Colorado economic impact study (Steffan et al., 2009). This metric, based on a United Kingdom study (Proctor, et al., 1997, p. 63), assumes that 23 percent of library user purchases from businesses located near a library would not occur if the library were closed (Steffan, et al., 2009, p. 5). The halo spending formula used in the Colorado studies was calculated on the basis of number of visits multiplied by the "average peer's amount spent elsewhere" multiplied by 23% (p. 6). Halo spending estimates ranged from $277,424 for the Fort Morgan Public Library (Library Research Service, 2007a, p. 2) to nearly $7.5 million for the Denver Public Library (Library Research Service, 2007, p. 2).

The second category refers to the amount a person is willing to pay for the possibility of consuming an object or service in the future (Bishop, 1982). O*ption values* of this type go up as the probability of use goes up in the mind of the consumer. In the case of public libraries, option values are generally associated with educational, cultural, and informational benefits (Getz, 1979, pp. 152-153; Karunaratne, 1979, p. 311; Van House, 1983, p. 28). The justification for these investments appears to be empirically demonstrated by the increase in the demand for public library services that usually accompanies economic downturns, such as the Great Depression (Molz, 1978, p. 416) and the recent Great Recession (Arns & Daniel, 2011). Other authors, including Loehr and Sandler (1978), raise a related topic, *bequest value*, when they speak of intergenerational benefits, and Kingma provides a pertinent example when he describes the "warm-glow [or] psychic value" that prompts an adult to bring his or her children to a public library (Kingma, 1996, p. 164).

In the late 1990's, the United American Way pioneered another approach to answering Orr's second question: outcomes based evaluation (OBE). Since then, OBE has been considered a valuable tool for a variety of purposes, including developing a better understanding of the contributions of specific programs/services/interventions in the lives of individuals and communities. OBE also helps consumers, families, policymakers, and funders make rational education, health care and social service-related choices based on a clearer understanding of the effectiveness, impact, costs and benefits associated with different services and interventions (Schalock, 2001, p.3). The outcomes or variables of interest correspond to *changes* in behaviors, skills, knowledge, attitudes, values, and conditions that result from program activities and expenditures.

Figure 1 provides an example of outcomes and indicators that might be used to examine different types of programs.

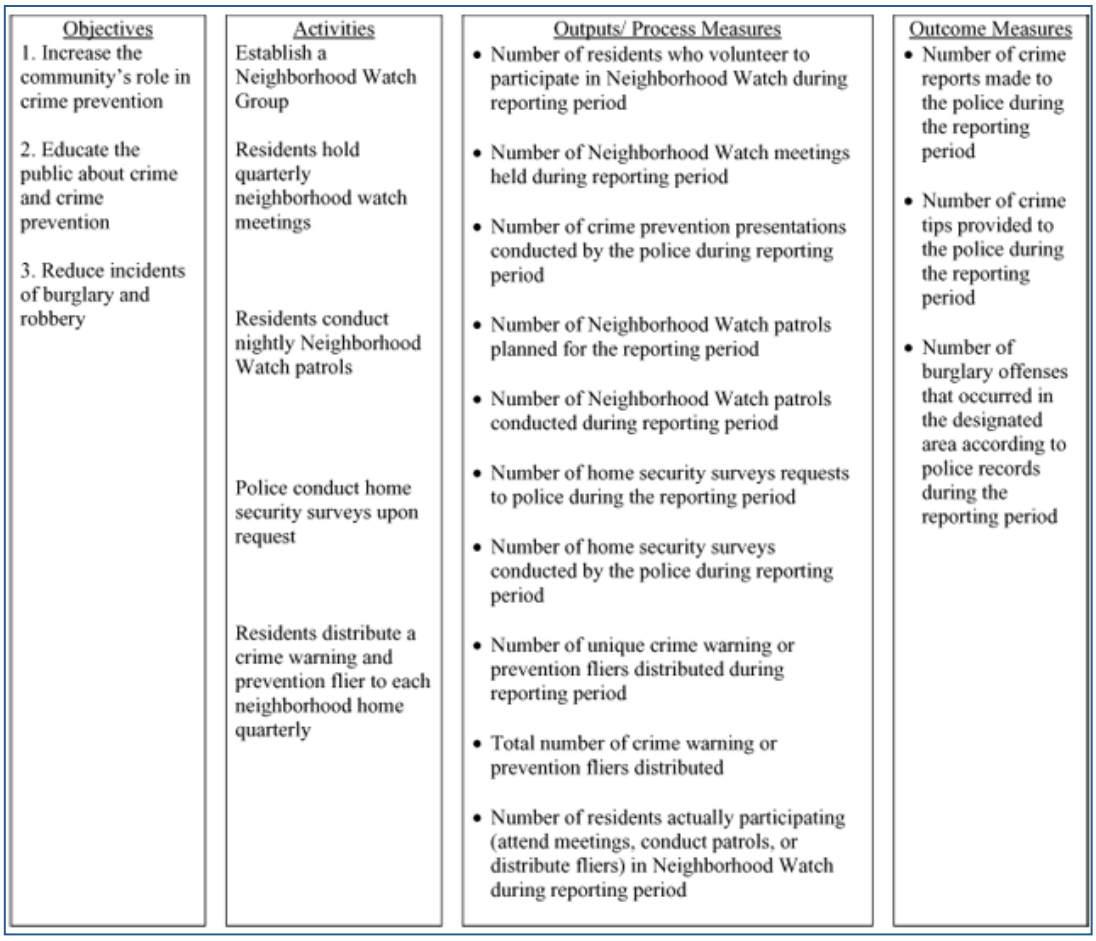
Figure 1: Outcomes and Indicators

Type of Program	Outcome	Indicator(s)
Smoking cessation class	Participants stop smoking.	• Number and percent of participants who report that they have quit smoking by the end of the course • Number and percent of participants who have not relapsed six months after program completion
Information and referral program	Callers access services to which they are referred or about which they are given information.	• Number and percent of community agencies that report an increase in new participants who came to their agency as a result of a call to the information and referral hotline • Number and percent of community agencies that indicate these referrals are appropriate
Tutorial program for 6th grade students	Students' academic performance improves.	• Number and percent of participants who earn better grades in the grading period following completion of the program than in the grading period immediately preceding enrollment in the program
English-as-a-second-language instruction	Participants become proficient in English.	• Number and percent of participants who demonstrate increase in ability to read, write, and speak English by the end of the course
Counseling for parents identified as at risk for child abuse or neglect	Risk factors decrease. No confirmed incidents of child abuse or neglect.	• Number and percent of participating families for whom Child Protective Service records report no confirmed child abuse or neglect during 12 months following program completion
Employee assistance program	Employees with drug and/or alcohol problems are rehabilitated and do not lose their jobs.	• Number and percent of program participants who are gainfully employed at same company 6 months after intake

Source: http://tarc.aecf.org/initiatives/mc/mcid/measures_one_measure.php?m_id=200143150

In order to be persuasive, these measurements require precise articulation of program objectives and valid and reliable indicators. The *logic model* in Figure 2 provides a more granular example of this process.

Figure 2: Logic Model



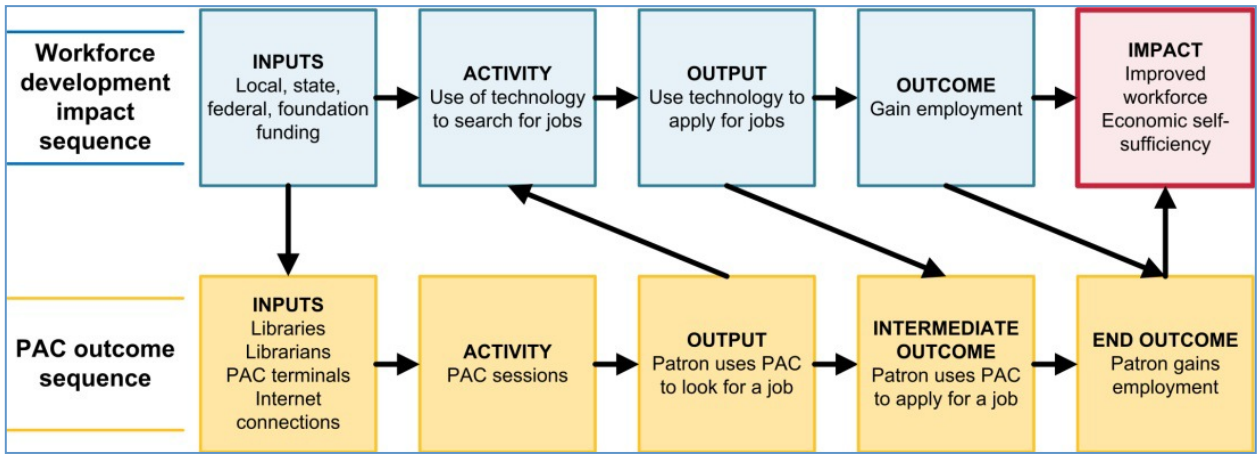
Objectives	Activities	Outputs/ Process Measures	Outcome Measures
1. Increase the community's role in crime prevention 2. Educate the public about crime and crime prevention 3. Reduce incidents of burglary and robbery	Establish a Neighborhood Watch Group Residents hold quarterly neighborhood watch meetings Residents conduct nightly Neighborhood Watch patrols Police conduct home security surveys upon request Residents distribute a crime warning and prevention flier to each neighborhood home quarterly	• Number of residents who volunteer to participate in Neighborhood Watch during reporting period • Number of Neighborhood Watch meetings held during reporting period • Number of crime prevention presentations conducted by the police during reporting period • Number of Neighborhood Watch patrols planned for the reporting period • Number of Neighborhood Watch patrols conducted during reporting period • Number of home security surveys requests to police during the reporting period • Number of home security surveys conducted by the police during reporting period • Number of unique crime warning or prevention fliers distributed during reporting period • Total number of crime warning or prevention fliers distributed • Number of residents actually participating (attend meetings, conduct patrols, or distribute fliers) in Neighborhood Watch during reporting period	• Number of crime reports made to the police during the reporting period • Number of crime tips provided to the police during the reporting period • Number of burglary offenses that occurred in the designated area according to police records during the reporting period

Source: http://www.ojp.usdoj.gov/BJA/evaluation/program-crime-prevention/cbcp6.htm

This evaluation approach to identifying "good" impacts is now commonly used by public service organizations (Schalock, 2001; Lynch-Cerullo & Cooney, 2011). IMLS requires grantees to express their objectives in terms of outcomes; and Durrance and Fisher (2005) use this approach in an IMLS-sponsored project that also draws upon guidance provided by the Annie E. Casey Foundation. The model suggests five outcome categories that might result from participation in social programs: connections to informal social networks, connections to economic opportunity, building neighborhood assets, family function, and child and family well-being. The areas where social network outcomes might be observed include relationships and interactions among neighbors and families; social, linguistic, and technological isolation; participation in community, religious, or civic activities and organizations; relationship between youth and adults; and neighborhood culture (p. 14).

Figure 3, provided by the IMLS sponsored University of Washington's *U.S. IMPACT Public Library Study*, also serves as a good model for thinking about outcomes.

Figure 3: U.S. Impact Public Library Study



Source: http://impact.ischool.washington.edu/documents/OPP4ALL_Appendix1.pdf

The major challenge associated with including outcome measurements in cost-benefit calculations lies in the development of across-the-board measurements that can be expressed with monetary values. The model above suggests some of the approaches that might be used to capture broad groupings of benefits, but its metrics are speculative and measurements of this type face validity problems. In Figure 3, above, the objective "increase the community's role in crime prevention" may have a bearing upon the number of crime reports during the reporting period, but it is more likely to be related to the number of "tips" received by the police. Putting a monetary value on either is difficult. In terms of crime reports, one might compare the total value of stolen property in a given neighborhood before the crime watch is established and afterwards, but a clearer link, perhaps by surveying either the police or potential perpetrators, would be required to establish the relationship. A more pressing case has been made for the costs associated with literacy outcomes using data related to incarceration rates and income loss, and survey instruments could be used to capture value perceptions among specific user populations. The smoking cessation class outcomes are, in contrast, more amenable to quantification, but the causal links and monetary assessments remain to be made.

In the studies we reviewed, there were many references to outcomes related to personal, political, and social capital. The role of public libraries in improving the character, quality, and positive image of communities is echoed in studies that focused on the Seattle, Pittsburgh, Kansas City, Indiana, Wisconsin, Maryland, South Carolina, and New York public libraries, among others (Berk & Associates, 2005, pp. 33-44; *Carnegie*, 2006, pp. 17-24; KC Consensus, 2004, p. 11; *Indiana*, 2007, p. 8; Morrill, 2003, pp. 21-22; Potomac, 2006, pp. 1-2; Barron, et al., 2005, p. 12; Regents Commission, 2000, App. B). Survey data gathered in Pittsburgh speaks highly of the library as a place that promotes literacy and learning and improves neighborhood quality of life (*Carnegie*, p. 17). The Seattle public library contributes to the city's identity and the residents' pride in their city (Berk & Associates, p. 44).

Although these benefits lay beyond the scope of this project, and integrating them with the benefits of immediate interest remains a difficult endeavor (White 2007), it should be kept in mind that their absence from the cost-benefit calculations we reviewed is quite likely to have resulted in estimates that substantially undervalue the benefits provided by public libraries.

Chapter 3
Meta-Analytic Frameworks

The prefix *meta* derives its meaning from the Greek word μετά that speaks to position and suggests concepts such as *among*, *with*, *after*, and *change*. It can also speak to *conformity*, *time*, and *purpose* when used as a preposition. In modern English, it enjoys a number of contextual interpretations. In the term *metadata*, it is used to refer to data about data. In the word *metaphysics*, it refers to that which is after or outside of the things of nature. In the word *metacognition*, it refers to awareness or analysis of one's own learning; and in every day speech, *metaphors* are used to create images that represent something that is intangible or difficult to describe.

In the domain of research, *meta-analysis* speaks to a different type of conformity and the idea that "instead of looking at any study in isolation, we need to look at the body of evidence" in order to understand the utility of events or interventions (Bornstein, Higgins, & Rothstein, 2009, p. xxi). Phrased differently, meta-analysis attempts to "integrate results from existing studies to reveal patterns of relatively invariant underlying relationships and causalities, the establishment of which will constitute general principles and cumulative knowledge" (Hunter & Schmidt, 2004, p.16). Utility is increased and knowledge advanced when synthesized data are found to conform to similar principles or results.

Within the Library and Information Science (LIS) field, this type of synthesis occurs at several levels. Narrative reviews such as those included in *The Annual Review of Information Science and Technology* (ARIST) have stood as beacons within the library and information science community for decades, as do many of the literature review chapters included in *Advances in Librarianship*. Numerous individual articles, such as Mizzaro's *Relevance: The Whole History* (1997); Birdi, Wilson, and Cocker's *The Public Library, Exclusion and Empathy: A Literature Review* (2008); and Rader's *Information Literacy 1973–2002: A Selected Literature Review (2003)* have also been very helpful in terms of synthesizing large bodies of literature.

The term *meta-analysis* begins to appear somewhat frequently in the LIS literature in the early 1990's, most notably with Trahan's (1993) discussion of the application of meta-analysis research techniques to library and information science research and the results of a pilot study that used this

approach to explore a question of continuing interest: the comparative effectiveness of computerized versus paper-based information retrieval systems. The author noted that it was necessary to reject many studies due to insufficient data reporting. Somewhat later, Mead and Richards (1995) point to the important role that information specialists can play in the systematic literature reviews that provide a foundation for meta-analysis papers. Saxton (1997) reported shortly thereafter the results of a meta-analysis of reference service evaluation studies, noting that of the fifty-nine studies initiated in the thirty-year period from 1965 to 1995, only seven reported the descriptive data and statistical measures required for meta-analysis.

Almost a decade later, Ankem (2005) provided a detailed discussion of the types of variables that figure in meta-analyses, the properties of the data needed for calculations, and three popular approaches to statistical analysis: Hedges and Olkin (1985), Rosenthal and Rubin (1978), and Hunter & Schmidt (1990). These approaches are exemplified in the author's meta-analysis of factors affecting information needs among cancer patients (Ankem, 2005). The study provided by the author for the purpose of example focuses on the impact of three demographic variables (age, education, and gender) and four situational variables (time since diagnosis, stage of cancer, treatment decision style, and type of treatment) on the information needs variable (pp. 167–168).

Speaking of the value obtained through meta-analysis, Ankem notes that "the reasons and advantages for any interested researcher to conduct a meta-analysis are that it (1) allows for more precise results related to a research problem as these results are a mathematical aggregate of those from various studies examining the variables in question, and (2) increases in [statistical] power" (p. 165).

Progress over the next decade is ably summarized in Saxton's (2006) literature review, and this paper includes pointed recommendations concerning the type of research that enables meta-analysis.

Chapter 4
Project META

Introduction

Successful meta-analysis requires three conditions: a situation where a treatment or intervention can be defined, a standardized metric that can be used to assess the intensity of the treatment, and a level of methodological consistency that supports the comparison of observations. When these are present, the treatments function as independent variables. In some cases, such as clinical drug trials, the treatments are relatively easy to describe and the metrics used to measure the treatments tend to be well-established using standardized measurements and frequencies. In the field of environmental studies, treatments are often contextualized as events, such as emissions and containment actions, that are subject to standardized volume measurements and time based frequencies.

For the purposes of this project, the treatment of interest was considered to be an action: the expenditure of public funds. The intensity of the treatment was thought to be reflected in the size of the expenditure, and the effect of interest was defined as the benefits that accrue as a result of the investment, all of which could be described in dollars. Given the variety of constructs that typically characterize these measurements, the combination of quantitative and qualitative approaches used in the LIS literature to asses value, and the variation in their treatment in the literature of interest, a multiple-method multi-phase approach was selected for assessment and comparison (Bryman, 2007; Schalock, 2001). Taken together, these analyses explore two fundamental questions. The first question asks whether there is mounting evidence that public libraries contribute to the economic prosperity of the communities they serve. The second question asks what steps need to be taken in order to strengthen this assertion?

Phase I: Data Collection—The User's Perspective

During Phase 1, an initial literature review was conducted using Dialog file 438 *Library Literature and Information Science;* and the results of this search were analyzed and extended using University of South Carolina search services provided by Wilson Web (HW Wilson), CSA Illumina, and EBSCO. Internet searches were also conducted using the Google advanced search feature (search terms "libr* valu*) and

random searches to locate referenced citations. Search terms including full and truncated versions of the terms and *phrases economic value, economic impact, return on investment, roi, contingent valuation, willingness to pay, wtp, and wta* were combined with the term *library*. As documents were identified, their citations were reviewed for additional studies that might be pertinent to these topics. These searches produced a large set of close to 200 citations that were initially reviewed for relevance to public library value.

Relevant documents were downloaded, printed, and tracked in Microsoft Excel spreadsheets that contain the following fields: study title, author name(s), study date, library or library system geographical location, database name or web URL, valuation methodology utilized, reported valuation ratios or monetary values, and META project researcher comments. The initial data entry and coding was performed by one researcher and verified by another prior to further analysis. The META study bibliography is available at http://www.libsci.sc.edu/MetaWeb/valuationstudies.html. Searches were repeated at approximately six month intervals to update the list of published materials. Separate files were created based on methodology.

The studies included in the research files were next reviewed in detail for suitability for subsequent analysis using the following initial criteria: 1) they included at least one economic cost-benefit measurement, 2) they provided a description of the methodology used to develop these measurements, and 3) the results of the study were sufficiently standardized and detailed to be comparable to other studies. Further consideration was given to Saxton's (2006, p. 167) amended criteria for statistical reporting and meta-analysis: 1) operational definitions of each of the variables mentioned in the article, 2) data indicating the mean, minimum, maximum, and standard deviation of these variables, 3) a list of the number of responses for each variable, 4) a clear description of the relationships between the variables, including the precise level of significance associated with the effect size observed, and (5) an explicit description of the study population and the unit of analysis.

Phase 1: Data Analysis

As Van Houtven (2008) notes, data gathered using WTA and WTP surveys present particular challenges when considered for statistical meta-analysis. In the health field, these arise in part from the heterogeneity that characterizes WTP literature, including the variety of research methods, reporting practices and publication outlets that typify these studies (p. 909). LIS researchers with a continuing interest in valuing public libraries and library services will encounter similar circumstances. Although

CVA is probably the most dominant analytical method in current use, review of these studies points to considerable variation in how CVA (and related approaches) was actually conducted when applied to a specific public library. There does not appear to be a consensus as to the best way to apply the method, and this lack of agreement causes considerable problems when one tries to assess reliability and validity within an individual study, and even more problems when one tries to assess them across several studies. The studies generally do not report the essential information needed for meta-analysis, such as sampling design, sample means, and standard deviations; therefore, we initially approached the studies we reviewed using descriptive statistics.

Phase 1: Results

The economic benefits reported in the studies we reviewed that focused primarily on direct benefits ranged somewhat widely between $2.70 and $13.50 when adjusted for inflation. The average benefit per dollar expenditure was $6.59. The median was $5.37. These results are summarized in Table 1.

Table 1: Contingent Valuation, Direct Benefits Study Summary

Study	Date of Study	Date of Data	CBA	Inflation Adjusted CBA (2011 Dollars)
Public Library Benefits Valuation Study - Birmingham Public Library, Al[a]	2000	1999	$2.00	$2.70
Charlotte Mecklenburg Library	2010	2008-2009	$3.14	$3.29
St. Louis Public Library, MO[a]	2000	1999	$3.75	$5.06
San Francisco Public Library[a]	2007	2005-2006	$4.74	$5.37
Baltimore County Public Library, MD[a]	2000	1999	$4.50	$6.08
King County Library System, WA[a]	2000	1999	$7.50	$10.13
Phoenix Public Library, AZ	2000	1999	$10.00	$13.50
[a] Mean ROI			**Mean**	**$6.59**

Consumer Price Index Source: All Urban Consumers, All Items, U.S. Department of Labor, Bureau of Labor Statistics. Available at ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt

In the studies reviewed that included indirect benefits, the total inflation-adjusted benefits per dollar expenditure ranged between $4.78 and $34.67. The median value is $5.77. The average was $8.76 when all the studies were considered and $6.57 when the largest and smallest values were

removed. Table 2 provides a summary of the estimates from the studies that considered both direct and indirect benefits.

Table 2: Contingent Valuation, Direct and Indirect Benefits Study Summary				
Study	Date of Study	Date of Data	CBA	Inflation Adjusted CBA (2011 Dollars)
Eagle Valley Library District, CO	2007	2006	$4.28	$4.78
Mesa County Public Library District, CO	2007	2006	$4.57	$5.10
Rangeview Library District, CO	2007	2006	$4.81	$5.37
Denver Public Library, CO	2007	2006	$4.96	$5.53
Charlotte Mecklenburg Library, NC[a]	2010	2008-2009	$5.32	$5.57
Douglas County Libraries, CO	2007	2006	$5.02	$5.60
Montrose Library District, CO	2007	2006	$5.33	$5.95
Pennsylvania Public Libraries	2006	2006	$5.50	$6.14
Florida Public Libraries	2004	2003-2004	$6.54	$7.89
Florida Public Libraries[b]	2010	2008	$8.32	$8.69
Fort Morgan Public Library, CO	2007	2006	$8.80	$9.82
Cortez Public Library, Co[c]	2007	2006	$31.07	$34.67
[a] Mean ROI [b]Mode value was used to reflect the distribution of the responses most accuractely [c] The Cortez Public Library has unusually high levels of users outside of funding unit.			**Mean**	**$8.76**

Phase 2: Data Collection—The Institutional Perspective

The IMLS *Public Libraries in the United States Survey* data files used during Phase 2 were attractive for several reasons. They were accompanied with operational definitions of each of their variables. The units of analysis were uniform and relatively consistent. The number of responses for each variable was known, and these were for the most part suitable for non-parametric and further statistical analysis. Of the two data files, the State Summary file is the smaller, providing descriptive information about the libraries and their services provided in the 50 states, U.S. Territories, and District of Columbia. The full Public Libraries in the United States file includes similar information for each of the over 9,000 U.S. public libraries included in the Summary file.

As previously described, the construct *investment* was operationalized using the amount of local dollars committed to or spent on library services — a figure that may also be thought of as the cost to the community of buying shares in this endeavor. The benefits derived from this investment were conceptualized in terms of the library services provided as a result of these investments. Several different metrics were used to convert these to comparable dollar-based variables, including proxy measurements. Appendix A provides a detailed explanation of metrics used to develop these variables.

Phase 2: Data Analysis

The University of South Carolina (SC) economic impact model was selected for use in this Phase based on the researchers' familiarity with the formulas and the industry data used for calculations. Efforts were also made to replicate the calculations described in several of the studies mentioned earlier in this report; however, these proved unsuccessful due to lack of details concerning the formulas and data elements used in these instances. *Appendix A* provides a more complete explanation of the data elements used in the SC model.

Phase 2: Results

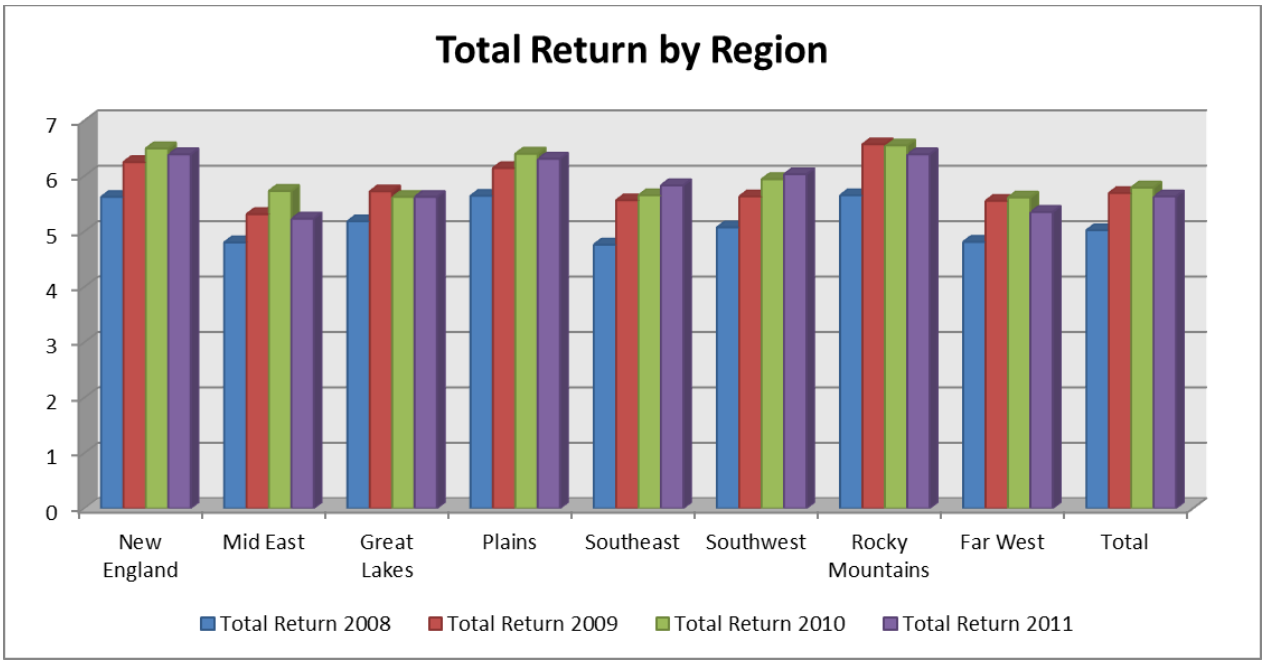
Initial analysis of the 2011 Summary file data indicated that these libraries currently include more than 3 million individuals within their service areas. Taken together, they receive investment funds that approach 11.4 billion dollars. Their 2011 direct benefit per dollar invested using the South Carolina economic impact model was $4.11. This figure rose to $5.63 when indirect returns were also considered. The direct return was highest in the Rocky Mountain ($4.91) and Plains ($4.80) states. The average total direct and indirect benefit was highest in the Rocky Mountain ($6.39), New England ($6.39), and Plains ($6.31) regions. Table 3 illustrates these findings.

Table 3: Regional Analysis of Return on Investment Estimates

Region	Direct Return 2008	Direct Return 2009	Direct Return 2010	Direct Return 2011	Indirect Return 2008	Indirect Return 2009	Indirect Return 2010	Indirect Return 2011	Total Return 2008	Total Return 2009	Total Return 2010	Total Return 2011
New England	$3.90	$4.52	$4.78	$4.70	$1.72	$1.73	$1.72	$1.70	$5.62	$6.25	$6.50	$6.39
Mid East	$3.20	$3.71	$4.00	$3.65	$1.60	$1.60	$1.73	$1.59	$4.80	$5.31	$5.73	$5.23
Great Lakes	$3.68	$4.23	$4.18	$4.16	$1.50	$1.49	$1.44	$1.46	$5.18	$5.72	$5.62	$5.62
Plains	$4.13	$4.63	$4.83	$4.80	$1.51	$1.51	$1.57	$1.52	$5.64	$6.14	$6.40	$6.31
Southeast	$3.36	$4.09	$4.20	$4.35	$1.40	$1.47	$1.45	$1.48	$4.76	$5.56	$5.65	$5.83
Southwest	$3.66	$4.17	$4.45	$4.49	$1.41	$1.46	$1.49	$1.55	$5.07	$5.63	$5.94	$6.03
Rocky Mountains	$4.13	$4.99	$5.04	$4.91	$1.52	$1.58	$1.51	$1.48	$5.65	$6.57	$6.55	$6.39
Far West	$3.31	$4.01	$4.09	$3.90	$1.50	$1.54	$1.52	$1.45	$4.81	$5.55	$5.61	$5.35
Total	$3.51	$4.15	$4.25	$4.11	$1.51	$1.54	$1.54	$1.51	$5.02	$5.69	$5.79	$5.63

The total benefit from a one-dollar expenditure also appears to be somewhat dynamic, in this case showing improvements in some cases between 2008 and 2011 that significantly outpace other investment vehicles. Figure 4 illustrates this development.

Figure 4: Total Return, 2008 through 2011



Prior to applying the SC methodology to the IMLS 2011 detail file, fifty-one records were eliminated due to missing data. As evidenced by the mean of $9.40 and standard deviation of $20.13, the data included in the full public library survey file is skewed toward the upper end of the measurement scale and is best represented by the median total value of $6.49. As shown in Table 4, the libraries serving the smallest service areas displayed the highest ratios.

Table 4: Total Value by Population Service Area

Population Service Area	# Libraries	Mean Service Area	Mean Total Value	Median Total Value
0 - 999	1054	567	$11.50	$6.65
1,000 - 2,499	1501	1,686	$11.24	$7.01
2,500 - 4,999	1288	3,659	$9.53	$6.89
5,000 - 9,999	1500	7,184	$9.61	$6.70
10,000 - 24,999	1754	15,974	$7.97	$6.32
25,000 - 49,999	991	35,002	$7.13	$6.10
50,000 - 99,999	564	70,259	$6.49	$6.00
100,000 - 249,999	353	156,983	$6.21	$5.93
250,000 - 499,999	109	351,526	$6.06	$5.99
500,000 - 999,999	57	727,380	$6.09	$5.85
1,000,000 and above	28	1,744,993	$5.87	$5.64

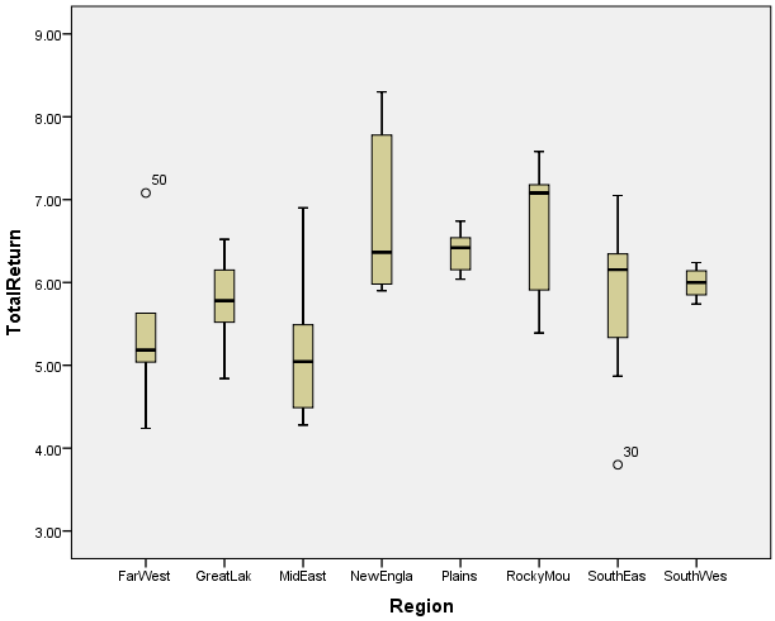
Phase 3: Pro Forma Meta-Analysis

When the means, standard deviations, and sample sizes are stated in public library valuation studies, statistical meta-analysis provides a tool for increasing statistical power when deriving point estimates and creating confidence intervals and facilitates methodological comparisons. During Phase Three, two approaches were used to explore the usefulness of this type of analysis and provide a third public library value perspective. The first set of calculations extends the regional analysis presented above to explore the use of the fixed effects meta-analysis model. The second set of calculations explores the use of the random effects model using data from three library valuation studies.

Meta-Analysis of 2010 IMLS Summary File by Region: Fixed Effects Model

The state level data used to perform this Phase Three analysis were generated using the University of South Carolina (SC) economic impact model and the 2011 IMLS *Public Library State Summary* file. The states were sorted into regions using the IMLS geographic region variable (OBEREG), and SPSS statistical software was used to generate the means and standard deviations for each region. The side-by-side box plots shown in Figure 5 illustrate the wide variability in total return both within and between the regions. The median return is represented by the middle line in the boxes. Each box depicts the range between the 1st and 3rd quartiles, representing 50% of all libraries within the region. The upper and lower tails of the boxes are also indicators of the variability in total return within each region. New England libraries generally appear to have the highest total return although the Rocky Mountain region median total return is higher than the New England region median return. The Mid-East libraries appear to have the lowest median total value. The Southwest libraries show the least amount of variability in total return.

Figure 5: Box plots of Total Value by Region



The 2011 total return means and standard deviations for each region shown in Table 5 confirm the visual inspection of the box plots. New England libraries have the highest mean return at $6.78, followed closely by Rocky Mountain libraries at $6.63 and Plains libraries at $6.37. Mid-Eastern libraries have the lowest mean total return at $5.20. The Southwest libraries have the lowest variability in total return at a standard deviation of $0.21. The 2011 mean total return based on each of the 50 states and the District of Columbia is $5.97 with a standard deviation of $0.91.

Table 5: 2011 Mean Total Returns by Region

Region	Mean	Sample Size	Std. Deviation
Far West	5.3933	6	.94305
Great Lakes	5.7620	5	.63916
Mid East	5.2083	6	.93538
New England	6.7817	6	1.01107
Plains	6.3700	7	.26413
Rocky Mountains	6.6280	5	.93052
South East	5.8092	12	.87373
South West	5.9950	4	.20680
Total	5.9712	51	.90794

Subsequent analysis using Comprehensive Meta-Analysis (V2) software treated each region as a separate study. The effect size of interest was defined as the mean total return. The fixed effects meta-analysis model was selected for the analysis because the IMLS data contains the population of public libraries in America, the regions are sub-sets of the population, and it can be assumed "that there is one *true effect size* . . . which underlies all the studies in the analysis" (Borenstein, Hedges, Higgins, & Rothstein, 2009, p. 62).

An omnibus test was run of the null hypothesis that all of the region mean total returns are equal (Figure 6). There was sufficient evidence to reject the hypothesis with 95% confidence (alpha = .05, Q-value = 24.142, degrees of freedom = 7, p-value < .001) and conclude that the differences between the region means shown in Table 5, above, are real differences that are not solely due to measurement error.

Figure 6: Omnibus Test of 2011 Region Means

Model		Effect size and 95% confidence interval					Test of null (2-Tail)		Heterogeneity			
Model	Number Studies	Point estimate	Standard error	Variance	Lower limit	Upper limit	Z-value	P-value	Q-value	df (Q)	P-value	I-squared
Fixed	8	6.119	0.064	0.004	5.994	6.244	96.185	0.000	24.142	7	0.001	71.005

Figure 7 contains the results of the meta-analysis of the regions that was conducted after the omnibus test led us to reject the null hypothesis that the region mean total returns were equal. The weights used in the model are determined by the inverse of the region variances. That explains why the Southwest and Plains regions received the highest weights in the model. As the regions with the lowest variance, the effect size estimates (mean) in the Southwest and Plains regions have higher precision than the estimates in the other regions. With the highest variance and lowest precision, the Rocky Mountain and New England regions received the lowest weights in the model.

The fixed effects model produced a point estimate of the effect size or mean total return for the regions of $6.12, which is $0.15 higher than the mean total return shown in Table 5, above. The combined variance is .004 and the standard deviation for the combined meta-analysis is only $0.06 compared to the standard deviation of $0.91 in Table 5. For this reason, it is possible to say that the meta-analysis increased the precision of the estimate of total return. The summary confidence interval generated using the fixed effects model tells us that we can be 95% confident (alpha = .05, p < .0001) that the true effect size — the population mean total return — is between $5.99 and $6.24

Figure 7: Meta-Analysis of 2011 Total Returns by Region

Model	Study name	Statistics for each study							Mean and 95% CI					Weight (Fixed)
		Mean	Standard error	Variance	Lower limit	Upper limit	Z-Value	p-Value	-1.00	-0.50	0.00	0.50	1.00	Relative weight
	Far West	5.393	0.385	0.148	4.639	6.148	14.009	0.000						2.73
	Great Lakes	5.762	0.286	0.082	5.202	6.322	20.158	0.000						4.95
	Mid East	5.208	0.382	0.146	4.460	5.957	13.639	0.000						2.78
	New	6.782	0.413	0.170	5.973	7.591	16.430	0.000						2.38
	Plains	6.370	0.100	0.010	6.174	6.566	63.807	0.000						40.61
	Rocky	6.628	0.416	0.173	5.812	7.444	15.927	0.000						2.34
	South East	5.809	0.252	0.064	5.315	6.304	23.032	0.000						6.36
	South West	5.995	0.103	0.011	5.792	6.198	57.979	0.000						37.86
Fixed		6.119	0.064	0.004	5.994	6.244	96.185	0.000						

Meta-Analysis of Library Valuation Studies: Random Effects Model

Data from three sources were used to explore the meta-analysis random effects model: (1) Aabø's (2009) review of public library valuation studies, (2) the 2010 SC Economic Impact study, and (3) the 2011 IMLS Public Library Summary File analyzed using the SC economic impact model. For consistency with Aabø's study, the IMLS and SC study total returns are shown in the calculations as ROI ratios rather than as dollars. The meta-analysis random effects model was chosen for this exploration because it cannot be assumed that the three studies share a common, true effect size or ROI. The IMLS data represents the population of American libraries, the SC data represents only SC libraries, and the Aabø study is a composite of twenty-seven different studies of county, state, or individual library systems. The true effect or ROI can be expected to vary between the three studies, so the assumption is made that they represent a "random sample of effect sizes that could have been observed" (Borenstein, Hedges, Higgins, & Rothstein, 2009, pp. 77-78). Unlike the fixed effects meta-analysis model that derives a point estimate of the effect size, the random effects model produces an estimate of the mean of the studies included in the meta-analysis, which are weighted by the inverse of the variance of each study plus a correction factor for the between-study variances.

An omnibus test was run of the hypothesis that the three study mean ROIs are equal. The results suggested sufficient evidence to reject the hypothesis with 95% confidence (alpha = .05, Q-value = 7.337, degrees of freedom = 2, p-value = .026) and conclude that the differences between the study means shown in Figure 7 are real differences that are not solely due to measurement error. If means, standard deviations, and sample sizes were available from cost-benefit, contingent valuation, and economic impact studies, meta-analysis could be used to compare the effect sizes or ROIs by type of methodology. Differences between the methodologies would be highlighted by a random effects meta-analysis of the within- and between-group variations.

The meta-analysis random effects estimate of the mean of the three studies is 5.70 and the variance is 0.16. As shown in Figure 8, the random effects estimate of the mean of the three studies is lower than the fixed effects estimate by 0.002. The small difference is explained by the inclusion of the between study variance factor (Tau-squared = 0.349) in the random effects model. The low between study variance factor is also illustrated by the nearly equal weights assigned to the studies under the random effects model. The IMLS study, with the lowest variance of the three studies, has the highest weight under the fixed effects model. However, the inclusion of the between study variance lowers the weight of the IMLS study in the random effects model. By including the between study variance factor, the random effects model gives more equal weight to all of the effect size information represented by the individual studies. The between study variance factor also explains the higher variance of the random effects model (0.16) versus the variance of the fixed effects model (0.04). The summary confidence interval generated using the random effects model tells us that we can be 95% confident (alpha = .05, $p < .0001$) that the true effect size — the population mean ROI of valuation studies — is between 4.92 and 6.49.

Figure 8: Random Effects Meta-Analysis of Three Studies

Model	Study name	Statistics for each study							Mean and 95% CI					Weight (Fixed)	Weight (Random)
		Mean	Standard error	Variance	Lower limit	Upper limit	Z-Value	p-Value	-1.00	-0.50	0.00	0.50	1.00	Relative weight	Relative weight
	2009AAbo	4.900	0.368	0.135	4.180	5.620	13.330	0.000						31.67	33.08
	2010SC	6.250	0.400	0.160	5.467	7.033	15.639	0.000						26.79	31.48
	2011IMLS	5.970	0.321	0.103	5.341	6.599	18.598	0.000						41.53	35.43
Fixed		5.706	0.207	0.043	5.301	6.112	27.583	0.000							
Random		5.704	0.400	0.160	4.920	6.488	14.260	0.000							

Meta-analysis can provide a tool for overcoming the "[l]ack of consistency in methodologies and applications [that] limits the ability to replicate research, compare valuation results, and apply the research findings" of public library valuation studies (Aabø, 2009, p. 313). As demonstrated here, the minimum critical data required to perform a meta-analysis of public library valuation studies are the means, standard deviations, and sample sizes of individual studies. Unfortunately, the body of published public library valuation research contains gaps in that critical data. The full potential of meta-analysis in a public library valuation context can only be realized when researchers publish the critical measures (mean, standard deviation, and sample size) or give open access to their data.

Chapter 5
Conclusions and Recommendations

As noted earlier, there are many reasons to measure organizational performance; and they typically focus on two basic issues: how well are we doing and are we doing good? A third question speaks to the reliability of the answers to these questions: is there is mounting evidence that support the conclusion to which they lead?

When the results of this project are taken into consideration, the answer to these questions appears to be yes — the analysis performed for this project suggests mounting evidence that public libraries contribute to the economic prosperity of the communities they serve and that these benefits typically range around five or six dollars for every dollar spent. Despite the methodological variation that characterized the CV studies reviewed during phase 1, the figures reported are remarkably similar. It does not seem to matter whether the subject is a single library, a system of libraries, a statewide, or a countrywide study of libraries. When expressed in constant 2011 dollars, the direct return from investments generally ranges between $2.70 and $13.50 despite major variations in the manner in which the data were collected. The average return is $8.76 when all the studies are considered and $6.57 when the highest and lowest values are removed. The median value is $5.78. The results of the Phase 2 calculations harmonize surprisingly well with these results and lend them reasonable credence, as do the results of the exploratory statistical analysis performed in phase 3. Taken together, these results further align with reports of strong and growing demand for public library services – a fact that appears to provide prima facie evidence that millions of Americans consider their public libraries a "good deal" and an attractive investment.

From an analytical perspective, these results also suggest three avenues that could be pursued in order to add weight to these observations. The first, further meta-analysis of the type described by Hedges and Olkin (1985), Rosenthal and Rubin (1978), and Schmidt (1990) and explored in Phase 3 of this project, requires additional independent studies which meet the statistical requirements described by Ankem in 2005 (p. 175) and others: variables that are adequately defined and measured, accurate reports of the sample sizes used in the analyses performed within a study, magnitude of test statistics observed, and other information relevant to test statistics. While it is possible that additional studies would simply confirm the findings resulting from this project, it is impossible to know if this is the case

without first creating a new corpus of studies that meet these requirements and secondly conducting this type of meta-analysis.

Better use of survey data could also add weight to these findings. The SC methodology used in this project was chosen as a matter of convenience and for the purpose of example, but we are not suggesting that is necessarily the best or right one for these types of calculations. Many heads are typically better than one and a more versatile or encompassing group of calculations might provide a more nuanced picture and calculate these values more surely. This type of cooperative approach could also provide additional support for the CV efforts we described earlier. While it is unlikely that a single standard survey could capture a perfect picture of the benefits received by every community, the development of a suite of duplicate surveys or survey questions would provide more comparable data and add value to the individual data collection efforts.

A third, and perhaps quite fruitful, approach would involve looking more carefully at the intangible outcomes and benefits that are typically not taken into account in these cost benefit estimates. As Matthews and others note, these types of benefits are typically considered more difficult to measure; but they tend to resonate when tied to local policy objectives — a fact that was not lost to solid men of Boston when they made their case for the first urban public library. To some degree, these arguments may be thought of as interpretive strategies that could add significant value to the cost-benefit ratios we examined. The historic images of local competitiveness, literacy and learning, and the belief that man may be improved through reading and exposure to cultural objects remain common themes in American discourse; and these beliefs and concerns are shared with other organizations who may wish to become partners and/or share their expertise in developing or testing cost and benefit estimates.

As noted above, IMLS (IMLS, 2000) and others have already provided scaffolding and guidance that discuss the importance of these measurements, which Schalock (2001) calls the third analytical perspective that produces well-rounded evaluations. He also discusses the problems associated with these measurements, but addresses them productively and provides examples of outcomes and metrics that can be used to assess the impact of programs targeted at particular groups, such as the elderly, and examples of more generic outcomes that could be used to explore the common goals and interests that lead to successful partnerships. When these outcomes and metrics are examined, we see a striking

resemblance to the ideals once described as the “library faith” and the promising prospect of a fuller understanding of both how well we are doing and the good we are doing. Mounting evidence suggests that real and permanent good is being accomplished and that the objects to be obtained by public library services are amenable to observation. Further examination is likely to confirm these findings, and the prospects for an approach that combines outcome measurements with ratios of the type discussed in this publication appear to be very promising.

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White Paper
A New Perspective on Public Library Value

Dr. Jennifer Weil Arns
Principal Investigator

Dr. Robert Williams
Ms. Karen Miller
Project Contributors

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School of Library and
Information Science
University of South Carolina

INSTITUTE of Museum and Library SERVICES

UNIVERSITY OF SOUTH CAROLINA

Executive Summary

The value of public libraries and the contributions they make to the individuals and communities they serve seem readily apparent. Demand is strong for their products and services. They are currently visited over a billion times a year, and they circulate two and one half billion items annually. Library users are vocal and passionate regarding the importance of their local libraries as symbols of community and instruments of literacy and learning.

There is also a longstanding and powerful consensus regarding the inherent value of public libraries as instruments of education and inspiration and as places of civic integration and equal access to information. This argument, based on humanistic values and intuition, still stands. But in today's environment it is often insufficient, particularly when competition for public funds and societal expectations for concrete measurements are part of the assessment equation.

As a result, a body of research has emerged that suggests new evidence regarding the economic value of public libraries. The studies vary in scope and depth, in the types of libraries or library systems examined, and in their geographic and economic contexts. They also vary in their rigor, their methods for gathering and analyzing data, and the reporting of their findings. Yet, individually and as a group, they provide an important perspective that complements the traditional qualitative approaches familiar to library advocates. This value increases when systematic statistical analysis is used to produce a more unified body of evidence.

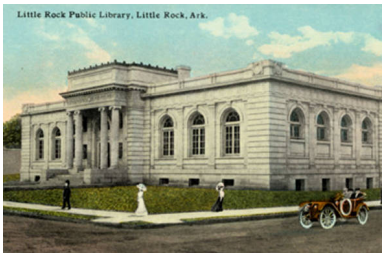
This White Paper summarizes the results of the IMLS funded University of South Carolina META project that was undertaken in order to explore the feasibility of developing this more robust and unified perspective. It approaches this topic with two fundamental questions: (1) whether the studies reviewed provide mounting evidence concerning the contributions that public libraries make to the economic prosperity of the communities they serve, and (2) what steps need to be taken in order to strengthen this assertion. The results of the initial analysis performed to answer these questions suggest that Americans typically receive five to six dollars for every dollar they spend on public library services. The results also lead to recommendations concerning strategies that could add strength to this assertion and provide a powerful new argument for the continuance of public library services: more detailed reporting practices, greater methodological consistency, and systematic consideration of intangible benefits.

Historic Overview

The value of public libraries has been a subject of interest for more than a century in the United States. *In the mid 1800's, the newly appointed Trustees of the Boston Public Library supported their case with persuasive imagery, linking public libraries to the common school cause and Horace Mann's arguments for public education. The rich imagery found in these statements portrayed public libraries as proponents of literacy, learning, civic pride, prosperity, and the cultural achievements of classical antiquity.*

As the urban landscape continued to be transformed by waves of immigrants, public libraries were seen as acculturation instruments. Progressive urban public libraries became prominent community centers and active social agents. In rural areas, public libraries were valued for the relief their wares brought to weary farm families.

Political and social values also figure in these assessments. *During periods of labor unrest, public libraries were credited with the ability to act as forces for social order and seen as proponents of unalloyed democratic spirit. As the numbers of public library buildings increased, the role of place became more prominent in value assessments, linking libraries more directly to the benefits of civic engagement and the development of local identity. During periods of war, somewhat conflicting images emerged. Value statements emphasized the patriotic contributions of encouraging materials and questioned the value of alien viewpoints.*



A close examination of modern public library mission statements suggests that these traditional value images have endured and progressed with timely adaptations. *Today's public libraries continue to be valued as classroom extensions and important alternatives to formal education. They are seen as vehicles for self-development and pathways to social, intellectual, and moral improvement. They are equally praised for their role as agents of socialization, considered wellsprings of democratic spirit, and seen as important contributors to community formation and social stabilization. Taken together or individually, these images suggest an array of individual and community benefits that range from sustenance of the spirit to social advantage.*

Value Perspectives

The current problem is one of measurement. *Although intuitive judgments have been adequate for many years to assure public approval and occasionally generous funding, in today's increasingly quantitative world, advocacy arguments are more likely to be successful when accompanied by metrics that speak to the needs of policy makers who are held accountable for balancing the requirements of competing constituencies and apportioning public funds for the overall good of their communities.*

Characterizing public services in this manner is always a challenging endeavor. *However, a good number of quantitative public library valuation studies have been completed by states, communities, and advocacy organizations. The majority use cost-benefit type measures that monetize the contributions that one or a group of libraries make to the communities they serve. In some cases, this approach is relatively straightforward, particularly when benefits are easily quantifiable in standardized or recognizable monetary units. Calculations become significantly more difficult when costs are not consistently defined, values are intangible, and benefits are not confined to those directly participating in the transaction of interest or using the library.*

Contingent valuation techniques have been used in public library studies to begin to address these problems. *In most cases, this approach relies on survey questions that ask users and clients how much they would be willing to pay for a service or willing to accept as payment for its loss. Although this method is not without its critics, it remains an important tool for obtaining client and user viewpoints, and there are examples of its use to develop economic assessments of natural resources, health care options, and public education practices.*

Economic modeling software*, including the Bureau of Economic Analysis (BEA) Regional Input-Output Modeling System (RIMS II), can also be used to explore the economic impact of*

public agencies. These studies typically use two types of data. The first describes the input and output structure of nearly 500 U.S. industries. The second provides a more granular picture of a region's industrial structure and trading patterns. The results of this type of analysis have been used to inform decisions related to military base realignment and closure, airport construction, and shopping center development.

Source: http://blog.bea.gov/tag/rims-ii/

A third approach uses administrative data of the type collected for the Public Libraries in the United States Survey. *In this case, public library benefits are described using figures such as the number of books circulated over a given time frame, the number of library programs provided, and the use of library computers.*

Costs are calculated using figures that indicate the amount of financial support each library receives from local, state, and federal sources.

A powerful fourth approach, meta-analysis, provides a tool for combining the results of multiple studies.

This type of statistical analysis is used in fields such as public health and medicine to determine whether a body of research is providing mounting evidence that a certain outcome or event is occurring. When the answer to this question is positive, the conclusions of the individual studies are strengthened. When the answer is negative or the results are indeterminate, the results maintain their individual value, but further research is needed to explore the reasons that their conclusions are not more widely supported

Meta-analysis also produces more robust and precise valuation point estimates, creates more useful confidence intervals, and facilitates methodological comparisons. However, to perform these calculations, certain information must be present, including means, standard deviations, and sample sizes. When these are absent, the benefits of meta-analysis are lessened and the arguments meta-analysis could support are weakened.

Project META

The libraries in the cost-benefit studies we reviewed varied significantly in terms of location, size, and governmental unit. *However, it did not seem to matter whether the results were developed using a single library, library system, state, or country-wide perspective. The inflation-adjusted economic benefits reported in the studies that focused primarily on direct benefits ranged somewhat widely between $2.70 and $13.50. The average benefit per dollar expenditure was $6.59. The median was $5.37.*

Table 1: Contingent Valuation, Direct Benefits Study Summary

Study	Date of Study	Date of Data	CBA	Inflation Adjusted CBA	Inflation Adjusted CBA (2011 Dollars)
Public Library Benefits Valuation Study - Birmingham Public Library, Al[a]	2000	1999	$2.00	$1.20	$2.70
Charlotte Mecklenburg Library	2010	2008-2009	$3.14	$1.46	$3.29
St. Louis Public Library, MO[a]	2000	1999	$3.75	$2.25	$5.06
San Francisco Public Library[a]	2007	2005-2006	$4.74	$2.39	$5.37
Baltimore County Public Library, MD[a]	2000	1999	$4.50	$2.70	$6.08
King County Library System, WA[a]	2000	1999	$7.50	$4.50	$10.13
Phoenix Public Library, AZ	2000	1999	$10.00	$6.00	$13.50
[a] Mean ROI				**Mean**	**$6.59**

Consumer Price Index Source: All Urban Consumers, All Items, U.S. Department of Labor, Bureau of Labor Statistics. Available at ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt

Several studies reported both direct and indirect benefits. *In these cases, the inflation adjusted median was $6.14. The average was $8.76 when all the studies were considered and $6.57 when the largest and smallest values are removed.*

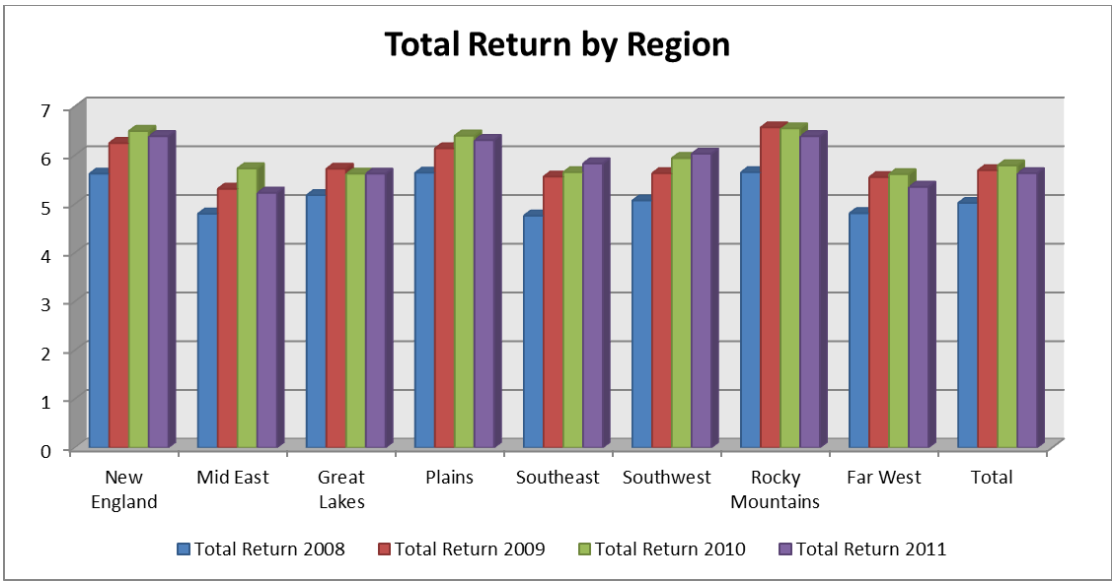
Table 2: Contingent Valuation, Direct and Indirect Benefits Study Summary				
Study	Date of Study	Date of Data	CBA	Inflation Adjusted CBA (2011 Dollars)
Eagle Valley Library District, CO	2007	2006	$4.28	$4.78
Mesa County Public Library District, CO	2007	2006	$4.57	$5.10
Rangeview Library District, CO	2007	2006	$4.81	$5.37
Denver Public Library, CO	2007	2006	$4.96	$5.53
Charlotte Mecklenburg Library, NC[a]	2010	2008-2009	$5.32	$5.57
Douglas County Libraries, CO	2007	2006	$5.02	$5.60
Montrose Library District, CO	2007	2006	$5.33	$5.95
Pennsylvania Public Libraries	2006	2006	$5.50	$6.14
Florida Public Libraries	2004	2003-2004	$6.54	$7.89
Florida Public Libraries[b]	2010	2008	$8.32	$8.69
Fort Morgan Public Library, CO	2007	2006	$8.80	$9.82
Cortez Public Library, Co[c]	2007	2006	$31.07	$34.67
[a] Mean ROI [b]Mode value was used to reflect the distribution of the responses most accuractely [c] The Cortez Public Library has unusually high levels of users outside of funding unit.			Mean	$8.76

Value estimates developed using administrative data, such as circulation statistics, harmonized well with the study figures. *Taken together, the libraries in these studies received investment funds that approached 11.4 billion dollars. The total 2011 direct benefit per dollar invested using the S C Economic Impact model was $4.11. This figure rose to $5.63 when indirect returns were also considered. The direct return was highest in the Rocky Mountain and Plains states. The total direct and indirect benefit was highest in the Rocky Mountain, New England, and Plains regions.*

Table 3: Regional Analysis of Return on Investment Estimates												
Region	Direct Return 2008	Direct Return 2009	Direct Return 2010	Direct Return 2011	Indirect Return 2008	Indirect Return 2009	Indirect Return 2010	Indirect Return 2011	Total Return 2008	Total Return 2009	Total Return 2010	Total Return 2011
New England	$3.90	$4.52	$4.78	$4.70	$1.72	$1.73	$1.72	$1.70	$5.62	$6.25	$6.50	$6.39
Mid East	$3.20	$3.71	$4.00	$3.65	$1.60	$1.60	$1.73	$1.59	$4.80	$5.31	$5.73	$5.23
Great Lakes	$3.68	$4.23	$4.18	$4.16	$1.50	$1.49	$1.44	$1.46	$5.18	$5.72	$5.62	$5.62
Plains	$4.13	$4.63	$4.83	$4.80	$1.51	$1.51	$1.57	$1.52	$5.64	$6.14	$6.40	$6.31
Southeast	$3.36	$4.09	$4.20	$4.35	$1.40	$1.47	$1.45	$1.48	$4.76	$5.56	$5.65	$5.83
Southwest	$3.66	$4.17	$4.45	$4.49	$1.41	$1.46	$1.49	$1.55	$5.07	$5.63	$5.94	$6.03
Rocky Mountains	$4.13	$4.99	$5.04	$4.91	$1.52	$1.58	$1.51	$1.48	$5.65	$6.57	$6.55	$6.39
Far West	$3.31	$4.01	$4.09	$3.90	$1.50	$1.54	$1.52	$1.45	$4.81	$5.55	$5.61	$5.35
Total	$3.51	$4.15	$4.25	$4.11	$1.51	$1.54	$1.54	$1.51	$5.02	$5.69	$5.79	$5.63

These results were also somewhat dynamic between 2008 and 2011, with changes reflecting the recent recession.

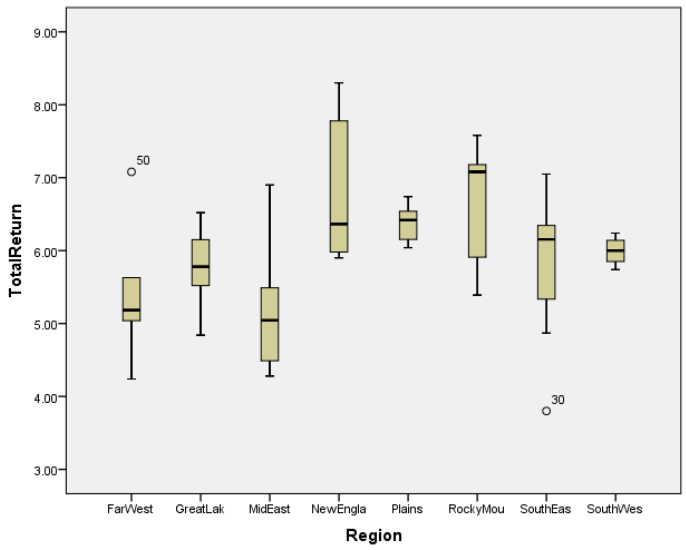
Figure 1 Total Return by Region



However, almost all the cost benefit studies lacked one or more of the elements needed for statistical meta-analysis, *including 1) operational definitions of each of the variables, 2) means and standard deviations, 3) the number of responses for each variable, 4) a clear description of the relationships between the variables, including the precise level of significance associated with the effect size observed, and (5) an explicit description of the study population and the unit of analysis.*

The Public Libraries in the United States State Summary file data were more promising and amenable to meta-analysis*. The units of analysis in the surveys were uniform and consistent. The means and standard deviations could be calculated, and outliers could be detected. The variables were accompanied by operational definitions. The number of responses for each variable was known, and for the most part these data were well described and documented.*

Figure 2: Dispersion of Regional Values Developed Using SC impact Study Algorithm



When a meta-analysis was conducted using the SC Public Library Economic Impact Study algorithm, the results indicated that the regional benefits likely to result from a one dollar investment ranged from $5.99 to 6.24.

Figure 3: Meta-Analysis of Total Value by Region

		Statistics for Each Study							Mean and 95% CL					
Model	Region	Mean	Standard Error	Variance	Low Limit	Upper Limit	Z-Value	pValue	-1.00	-0.50	0.00	0.50	1.00	Relative Weight
	Far West	5.393	0.385	0.148	4.639	6.148	14.009	0.000						2.73
	Grt Lakes	5.762	0.286	0.082	5.202	6.322	20.158	0.000						4.95
	Mid East	5.208	0.382	0.146	4.460	5.957	13.639	0.000						2.78
	NewEng	6.782	0.413	0.170	5.973	7.591	16.430	0.000						2.38
	Plain	6.370	0.100	0.010	6.174	6.566	63.807	0.000						40.61
	Rocky	6.628	0.416	0.173	5.812	7.444	15.927	0.000						2.34
	S East	5.809	0.252	0.064	5.315	6.304	23.032	0.000						6.36
	S West	5.995	0.103	0.011	5.792	8.198	57.979	0.000						37.86
Fixed		6.119	0.064	0.004	5.994	6.244	96.185	0.000						

Major Findings

- *The economic value of public libraries continues to be of strong interest to those responsible for public library services and the advocates who work diligently to preserve the quality and availability of these services. This need is particularly important in instances where public officials are routinely faced with decisions concerning the use of public funds and the need to maximize the benefit of those funds.*

- *The literature review and analysis performed for project META suggest a pattern of positive and mounting evidence concerning the contributions that public libraries make to the prosperity of their communities. Based on this work, it is reasonable to assert that Americans typically receive benefits in the range of $5 to $6 for every $1 they spend on public library services.*

- *It is also reasonable to assert that these figure may undervalue their target and that more accurate and persuasive figures could be developed through 1) closer attention to the intangible benefits, such as improvements in childhood literacy and community engagement, which have traditionally figured in advocacy arguments, 2) the development of improved reporting standards, and 3) greater methodological consistency.*

- *These critical improvements in reporting and analysis are important for several reasons. Based on recent experiences, it possible to say that we have moved to a point where single arguments are no longer persuasive. Administrators and library advocates arriving at meetings holding a single card, whether economic or traditional, are unlikely to walk away winners. Those who draw from a deck of complementary measures are more likely to be successful, and those who can fashion a shrewd hand that corresponds to the needs and interests of their funding bodies and community leaders are likely to take the prize.*

- *With this in mind, we are not suggesting that the preliminary results concerning the economic value of public libraries described in this paper are adequate to make the case for public libraries. We do suggest that they can be influential when added to the powerful narratives and arguments that have sustained U.S. public libraries for nearly one and one-half centuries.*

Recommendations

The results of the META Project suggest that the field of library valuation has a promising future that can be strengthened through additional research and expected to provide meaningful information that will be useful to library professionals, advocates, and decision-makers. To realize this promise and to build upon the findings of this report, the following steps are recommended:

- *The first,* ***the production of a new group of studies*** *that are suitable for meta-analysis, requires an ongoing research agenda that results in a new research corpus that meets more rigorous reporting standards and statistical requirements, including variables that are adequately defined and measured, accurate reports of the sample sizes that figure in the analyses, the magnitude of test statistics observed, and other relevant information.*

- *The second,* ***adoption of a more collaborate approach****, has much to offer. The SC economic impact model used in this report was chosen as a matter of convenience and for the purpose of example, but is not necessarily the best or right one for these types of calculations. A more versatile or encompassing group of calculations could be developed through professional consensus, and a cooperative approach could result in an interview protocol that would produce more comparable data and results that would be more generalizable.*

- *The third, and perhaps most fruitful step,* ***a more careful look at the intangible outcomes and benefits,*** *would result in more accurate value assessments. These factors are typically not taken into account in cost benefit estimates because they are considered more difficult to measure. However, they tend to resonate in discussions of local policy objectives and have been successfully explored in other academic disciplines. Further attention to these studies and the development of interdisciplinary partnerships consequently appear to have much to offer.*

2013

White Paper
A New Perspective on Public Library Value

Dr. Jennifer Weil Arns
Principal Investigator

Dr. Robert Williams
Ms. Karen Miller
Project Contributors

IMLS Grant #: RE-04-08-0047

School of Library and
Information Science
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The value of public libraries and the contributions they make to the individuals and communities they serve seem readily apparent. Demand is strong for their products and services. They are currently visited over a billion times a year, and they circulate two and one half billion items annually. Library users are vocal and passionate regarding the importance of their local libraries as symbols of community and instruments of literacy and learning.

There is also a longstanding and powerful consensus regarding the inherent value of public libraries as instruments of education and inspiration and as places of civic integration and equal access to information. This argument, based on humanistic values and intuition, still stands. But in today's environment it is often insufficient, particularly when competition for public funds and societal expectations for concrete measurements are part of the assessment equation.

As a result, a body of research has emerged that suggests new evidence regarding the economic value of public libraries. The studies vary in scope and depth, in the types of libraries or library systems examined, and in their geographic and economic contexts. They also vary in their rigor, their methods for gathering and analyzing data, and the reporting of their findings. Yet, individually and as a group, they provide an important perspective that complements the traditional qualitative approaches familiar to library advocates. This value increases when systematic statistical analysis is used to produce a more unified body of evidence.

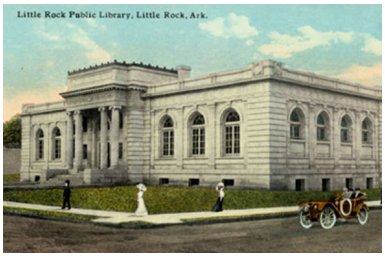
This White Paper summarizes the results of the IMLS funded University of South Carolina META project that was undertaken in order to explore the feasibility of developing this more robust and unified perspective. It approaches this topic with two fundamental questions: (1) whether the studies reviewed provide mounting evidence concerning the contributions that public libraries make to the economic prosperity of the communities they serve, and (2) what steps need to be taken in order to strengthen this assertion. The results of the initial analysis performed to answer these questions suggest that Americans typically receive five to six dollars for every dollar they spend on public library services. The results also lead to recommendations concerning strategies that could add strength to this assertion and provide a powerful new argument for the continuance of public library services: more detailed reporting practices, greater methodological consistency, and systematic consideration of intangible benefits.

Historic Overview

The value of public libraries has been a subject of interest for more than a century in the United States. *In the mid 1800's, the newly appointed Trustees of the Boston Public Library supported their case with persuasive imagery, linking public libraries to the common school cause and Horace Mann's arguments for public education. The rich imagery found in these statements portrayed public libraries as proponents of literacy, learning, civic pride, prosperity, and the cultural achievements of classical antiquity.*

As the urban landscape continued to be transformed by waves of immigrants, public libraries were seen as acculturation instruments. Progressive urban public libraries became prominent community centers and active social agents. In rural areas, public libraries were valued for the relief their wares brought to weary farm families.

Political and social values also figure in these assessments. *During periods of labor unrest, public libraries were credited with the ability to act as forces for social order and seen as proponents of unalloyed democratic spirit. As the numbers of public library buildings increased, the role of place became more prominent in value assessments, linking libraries more directly to the benefits of civic engagement and the development of local identity. During periods of war, somewhat conflicting images emerged. Value statements emphasized the patriotic contributions of encouraging materials and questioned the value of alien viewpoints.*



A close examination of modern public library mission statements suggests that these traditional value images have endured and progressed with timely adaptations. *Today's public libraries continue to be valued as classroom extensions and important alternatives to formal education. They are seen as vehicles for self-development and pathways to social, intellectual, and moral improvement. They are equally praised for their role as agents of socialization, considered wellsprings of democratic spirit, and seen as important contributors to community formation and social stabilization. Taken together or individually, these images suggest an array of individual and community benefits that range from sustenance of the spirit to social advantage.*

Value Perspectives

The current problem is one of measurement. *Although intuitive judgments have been adequate for many years to assure public approval and occasionally generous funding, in today's increasingly quantitative world, advocacy arguments are more likely to be successful when accompanied by metrics that speak to the needs of policy makers who are held accountable for balancing the requirements of competing constituencies and apportioning public funds for the overall good of their communities.*

Characterizing public services in this manner is always a challenging endeavor. *However, a good number of quantitative public library valuation studies have been completed by states, communities, and advocacy organizations. The majority use cost-benefit type measures that monetize the contributions that one or a group of libraries make to the communities they serve. In some cases, this approach is relatively straightforward, particularly when benefits are easily quantifiable in standardized or recognizable monetary units. Calculations become significantly more difficult when costs are not consistently defined, values are intangible, and benefits are not confined to those directly participating in the transaction of interest or using the library.*

Contingent valuation techniques have been used in public library studies to begin to address these problems. *In most cases, this approach relies on survey questions that ask users and clients how much they would be willing to pay for a service or willing to accept as payment for its loss. Although this method is not without its critics, it remains an important tool for obtaining client and user viewpoints, and there are examples of its use to develop economic assessments of natural resources, health care options, and public education practices.*

Economic modeling software*, including the Bureau of Economic Analysis (BEA) Regional Input-Output Modeling System (RIMS II), can also be used to explore the economic impact of*

public agencies. These studies typically use two types of data. The first describes the input and output structure of nearly 500 U.S. industries. The second provides a more granular picture of a region's industrial structure and trading patterns. The results of this type of analysis have been used to inform decisions related to military base realignment and closure, airport construction, and shopping center development.

Source: http://blog.bea.gov/tag/rims-ii/

A third approach uses administrative data of the type collected for the Public Libraries in the United States Survey. *In this case, public library benefits are described using figures such as the number of books circulated over a given time frame, the number of library programs provided, and the use of library computers.*

Costs are calculated using figures that indicate the amount of financial support each library receives from local, state, and federal sources.

A powerful fourth approach, meta-analysis, provides a tool for combining the results of multiple studies.

This type of statistical analysis is used in fields such as public health and medicine to determine whether a body of research is providing mounting evidence that a certain outcome or event is occurring. When the answer to this question is positive, the conclusions of the individual studies are strengthened. When the answer is negative or the results are indeterminate, the results maintain their individual value, but further research is needed to explore the reasons that their conclusions are not more widely supported

Meta-analysis also produces more robust and precise valuation point estimates, creates more useful confidence intervals, and facilitates methodological comparisons. However, to perform these calculations, certain information must be present, including means, standard deviations, and sample sizes. When these are absent, the benefits of meta-analysis are lessened and the arguments meta-analysis could support are weakened.

Project META

The libraries in the cost-benefit studies we reviewed varied significantly in terms of location, size, and governmental unit. *However, it did not seem to matter whether the results were developed using a single library, library system, state, or country-wide perspective. The inflation-adjusted economic benefits reported in the studies that focused primarily on direct benefits ranged somewhat widely between $2.70 and $13.50. The average benefit per dollar expenditure was $6.59. The median was $5.37.*

Table 1: Contingent Valuation, Direct Benefits Study Summary

Study	Date of Study	Date of Data	CBA	Inflation Adjusted CBA	Inflation Adjusted CBA (2011 Dollars)
Public Library Benefits Valuation Study - Birmingham Public Library, Al[a]	2000	1999	$2.00	$1.20	$2.70
Charlotte Mecklenburg Library	2010	2008-2009	$3.14	$1.46	$3.29
St. Louis Public Library, MO[a]	2000	1999	$3.75	$2.25	$5.06
San Francisco Public Library[a]	2007	2005-2006	$4.74	$2.39	$5.37
Baltimore County Public Library, MD[a]	2000	1999	$4.50	$2.70	$6.08
King County Library System, WA[a]	2000	1999	$7.50	$4.50	$10.13
Phoenix Public Library, AZ	2000	1999	$10.00	$6.00	$13.50
[a] Mean ROI				**Mean**	**$6.59**

Consumer Price Index Source: All Urban Consumers, All Items, U.S. Department of Labor, Bureau of Labor Statistics. Available at ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt

Several studies reported both direct and indirect benefits. *In these cases, the inflation adjusted median was $6.14. The average was $8.76 when all the studies were considered and $6.57 when the largest and smallest values are removed.*

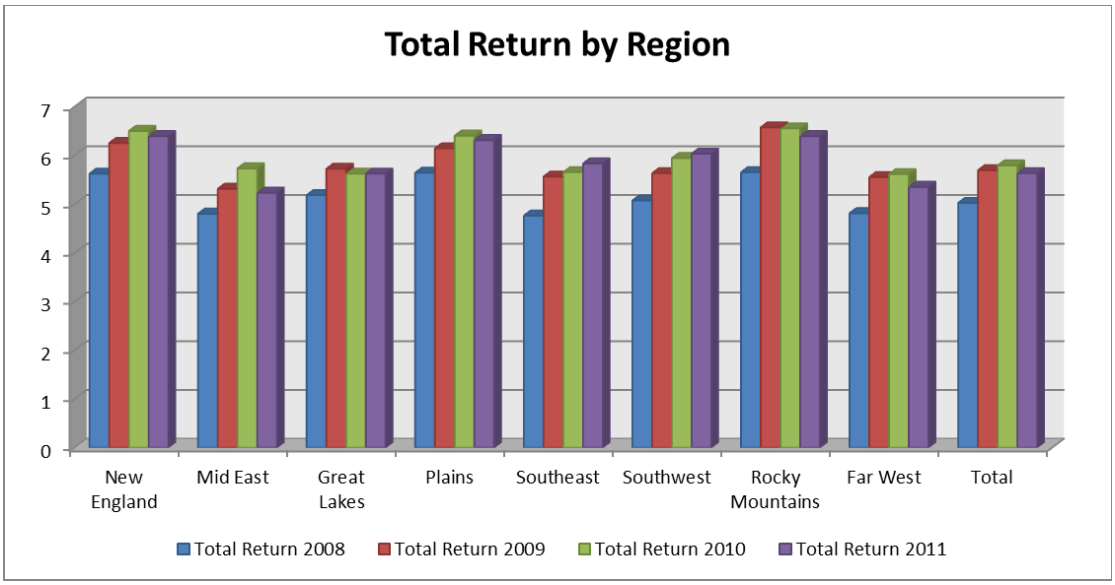
Table 2: Contingent Valuation, Direct and Indirect Benefits Study Summary				
Study	Date of Study	Date of Data	CBA	Inflation Adjusted CBA (2011 Dollars)
Eagle Valley Library District, CO	2007	2006	$4.28	$4.78
Mesa County Public Library District, CO	2007	2006	$4.57	$5.10
Rangeview Library District, CO	2007	2006	$4.81	$5.37
Denver Public Library, CO	2007	2006	$4.96	$5.53
Charlotte Mecklenburg Library, NC[a]	2010	2008-2009	$5.32	$5.57
Douglas County Libraries, CO	2007	2006	$5.02	$5.60
Montrose Library District, CO	2007	2006	$5.33	$5.95
Pennsylvania Public Libraries	2006	2006	$5.50	$6.14
Florida Public Libraries	2004	2003-2004	$6.54	$7.89
Florida Public Libraries[b]	2010	2008	$8.32	$8.69
Fort Morgan Public Library, CO	2007	2006	$8.80	$9.82
Cortez Public Library, Co[c]	2007	2006	$31.07	$34.67
[a] Mean ROI [b]Mode value was used to reflect the distribution of the responses most accuractely [c] The Cortez Public Library has unusually high levels of users outside of funding unit.			Mean	$8.76

Value estimates developed using administrative data, such as circulation statistics, harmonized well with the study figures. *Taken together, the libraries in these studies received investment funds that approached 11.4 billion dollars. The total 2011 direct benefit per dollar invested using the S C Economic Impact model was $4.11. This figure rose to $5.63 when indirect returns were also considered. The direct return was highest in the Rocky Mountain and Plains states. The total direct and indirect benefit was highest in the Rocky Mountain, New England, and Plains regions.*

Table 3: Regional Analysis of Return on Investment Estimates												
Region	Direct Return 2008	Direct Return 2009	Direct Return 2010	Direct Return 2011	Indirect Return 2008	Indirect Return 2009	Indirect Return 2010	Indirect Return 2011	Total Return 2008	Total Return 2009	Total Return 2010	Total Return 2011
New England	$3.90	$4.52	$4.78	$4.70	$1.72	$1.73	$1.72	$1.70	$5.62	$6.25	$6.50	$6.39
Mid East	$3.20	$3.71	$4.00	$3.65	$1.60	$1.60	$1.73	$1.59	$4.80	$5.31	$5.73	$5.23
Great Lakes	$3.68	$4.23	$4.18	$4.16	$1.50	$1.49	$1.44	$1.46	$5.18	$5.72	$5.62	$5.62
Plains	$4.13	$4.63	$4.83	$4.80	$1.51	$1.51	$1.57	$1.52	$5.64	$6.14	$6.40	$6.31
Southeast	$3.36	$4.09	$4.20	$4.35	$1.40	$1.47	$1.45	$1.48	$4.76	$5.56	$5.65	$5.83
Southwest	$3.66	$4.17	$4.45	$4.49	$1.41	$1.46	$1.49	$1.55	$5.07	$5.63	$5.94	$6.03
Rocky Mountains	$4.13	$4.99	$5.04	$4.91	$1.52	$1.58	$1.51	$1.48	$5.65	$6.57	$6.55	$6.39
Far West	$3.31	$4.01	$4.09	$3.90	$1.50	$1.54	$1.52	$1.45	$4.81	$5.55	$5.61	$5.35
Total	$3.51	$4.15	$4.25	$4.11	$1.51	$1.54	$1.54	$1.51	$5.02	$5.69	$5.79	$5.63

These results were also somewhat dynamic between 2008 and 2011, with changes reflecting the recent recession.

Figure 1 Total Return by Region



However, almost all the cost benefit studies lacked one or more of the elements needed for statistical meta-analysis, *including 1) operational definitions of each of the variables, 2) means and standard deviations, 3) the number of responses for each variable, 4) a clear description of the relationships between the variables, including the precise level of significance associated with the effect size observed, and (5) an explicit description of the study population and the unit of analysis.*

The Public Libraries in the United States State Summary file data were more promising and amenable to meta-analysis*. The units of analysis in the surveys were uniform and consistent. The means and standard deviations could be calculated, and outliers could be detected. The variables were accompanied by operational definitions. The number of responses for each variable was known, and for the most part these data were well described and documented.*

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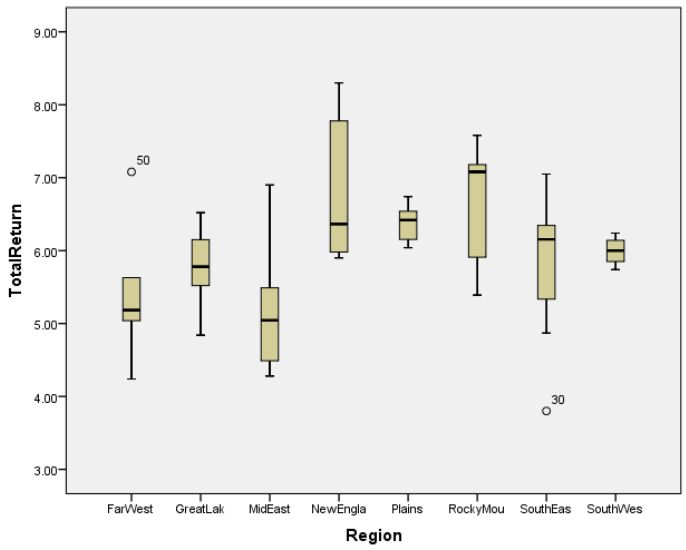

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Major Findings

- *The economic value of public libraries continues to be of strong interest to those responsible for public library services and the advocates who work diligently to preserve the quality and availability of these services. This need is particularly important in instances where public officials are routinely faced with decisions concerning the use of public funds and the need to maximize the benefit of those funds.*

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Recommendations

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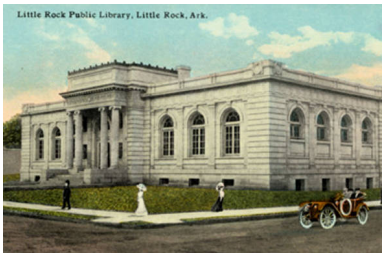

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public agencies. These studies typically use two types of data. The first describes the input and output structure of nearly 500 U.S. industries. The second provides a more granular picture of a region's industrial structure and trading patterns. The results of this type of analysis have been used to inform decisions related to military base realignment and closure, airport construction, and shopping center development.

Source: http://blog.bea.gov/tag/rims-ii/

A third approach uses administrative data of the type collected for the Public Libraries in the United States Survey. *In this case, public library benefits are described using figures such as the number of books circulated over a given time frame, the number of library programs provided, and the use of library computers.*

Costs are calculated using figures that indicate the amount of financial support each library receives from local, state, and federal sources.

A powerful fourth approach, meta-analysis, provides a tool for combining the results of multiple studies.

This type of statistical analysis is used in fields such as public health and medicine to determine whether a body of research is providing mounting evidence that a certain outcome or event is occurring. When the answer to this question is positive, the conclusions of the individual studies are strengthened. When the answer is negative or the results are indeterminate, the results maintain their individual value, but further research is needed to explore the reasons that their conclusions are not more widely supported

Meta-analysis also produces more robust and precise valuation point estimates, creates more useful confidence intervals, and facilitates methodological comparisons. However, to perform these calculations, certain information must be present, including means, standard deviations, and sample sizes. When these are absent, the benefits of meta-analysis are lessened and the arguments meta-analysis could support are weakened.

Project META

The libraries in the cost-benefit studies we reviewed varied significantly in terms of location, size, and governmental unit. *However, it did not seem to matter whether the results were developed using a single library, library system, state, or country-wide perspective. The inflation-adjusted economic benefits reported in the studies that focused primarily on direct benefits ranged somewhat widely between $2.70 and $13.50. The average benefit per dollar expenditure was $6.59. The median was $5.37.*

Table 1: Contingent Valuation, Direct Benefits Study Summary

Study	Date of Study	Date of Data	CBA	Inflation Adjusted CBA	Inflation Adjusted CBA (2011 Dollars)
Public Library Benefits Valuation Study - Birmingham Public Library, Al[a]	2000	1999	$2.00	$1.20	$2.70
Charlotte Mecklenburg Library	2010	2008-2009	$3.14	$1.46	$3.29
St. Louis Public Library, MO[a]	2000	1999	$3.75	$2.25	$5.06
San Francisco Public Library[a]	2007	2005-2006	$4.74	$2.39	$5.37
Baltimore County Public Library, MD[a]	2000	1999	$4.50	$2.70	$6.08
King County Library System, WA[a]	2000	1999	$7.50	$4.50	$10.13
Phoenix Public Library, AZ	2000	1999	$10.00	$6.00	$13.50
[a] Mean ROI				**Mean**	**$6.59**

Consumer Price Index Source: All Urban Consumers, All Items, U.S. Department of Labor, Bureau of Labor Statistics. Available at ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt

Several studies reported both direct and indirect benefits. *In these cases, the inflation adjusted median was $6.14. The average was $8.76 when all the studies were considered and $6.57 when the largest and smallest values are removed.*

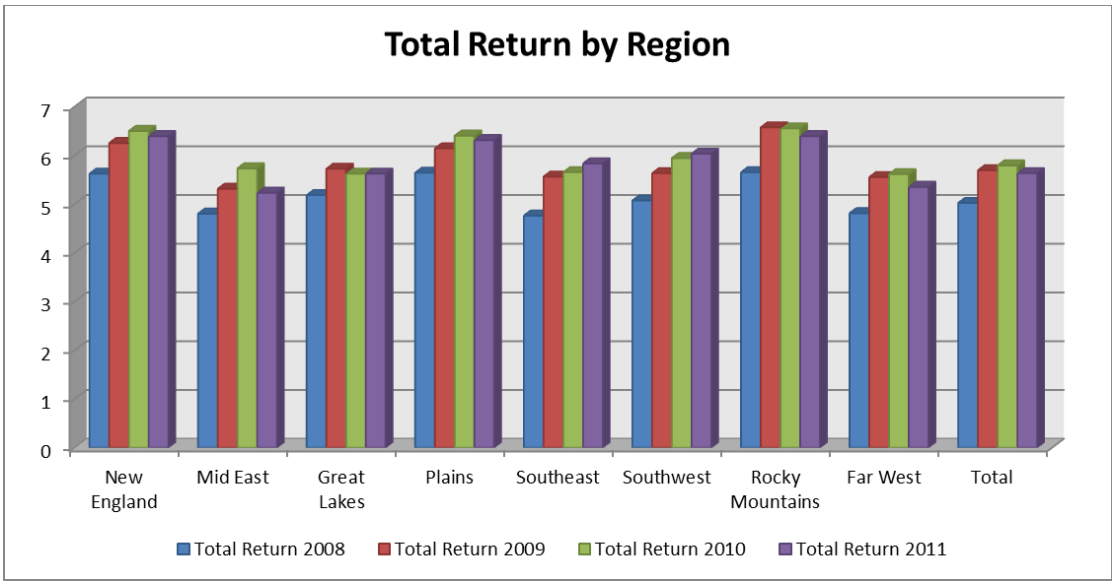
Table 2: Contingent Valuation, Direct and Indirect Benefits Study Summary				
Study	Date of Study	Date of Data	CBA	Inflation Adjusted CBA (2011 Dollars)
Eagle Valley Library District, CO	2007	2006	$4.28	$4.78
Mesa County Public Library District, CO	2007	2006	$4.57	$5.10
Rangeview Library District, CO	2007	2006	$4.81	$5.37
Denver Public Library, CO	2007	2006	$4.96	$5.53
Charlotte Mecklenburg Library, NC[a]	2010	2008-2009	$5.32	$5.57
Douglas County Libraries, CO	2007	2006	$5.02	$5.60
Montrose Library District, CO	2007	2006	$5.33	$5.95
Pennsylvania Public Libraries	2006	2006	$5.50	$6.14
Florida Public Libraries	2004	2003-2004	$6.54	$7.89
Florida Public Libraries[b]	2010	2008	$8.32	$8.69
Fort Morgan Public Library, CO	2007	2006	$8.80	$9.82
Cortez Public Library, Co[c]	2007	2006	$31.07	$34.67
[a] Mean ROI [b]Mode value was used to reflect the distribution of the responses most accuractely [c] The Cortez Public Library has unusually high levels of users outside of funding unit.			Mean	$8.76

Value estimates developed using administrative data, such as circulation statistics, harmonized well with the study figures. *Taken together, the libraries in these studies received investment funds that approached 11.4 billion dollars. The total 2011 direct benefit per dollar invested using the S C Economic Impact model was $4.11. This figure rose to $5.63 when indirect returns were also considered. The direct return was highest in the Rocky Mountain and Plains states. The total direct and indirect benefit was highest in the Rocky Mountain, New England, and Plains regions.*

Table 3: Regional Analysis of Return on Investment Estimates												
Region	Direct Return 2008	Direct Return 2009	Direct Return 2010	Direct Return 2011	Indirect Return 2008	Indirect Return 2009	Indirect Return 2010	Indirect Return 2011	Total Return 2008	Total Return 2009	Total Return 2010	Total Return 2011
New England	$3.90	$4.52	$4.78	$4.70	$1.72	$1.73	$1.72	$1.70	$5.62	$6.25	$6.50	$6.39
Mid East	$3.20	$3.71	$4.00	$3.65	$1.60	$1.60	$1.73	$1.59	$4.80	$5.31	$5.73	$5.23
Great Lakes	$3.68	$4.23	$4.18	$4.16	$1.50	$1.49	$1.44	$1.46	$5.18	$5.72	$5.62	$5.62
Plains	$4.13	$4.63	$4.83	$4.80	$1.51	$1.51	$1.57	$1.52	$5.64	$6.14	$6.40	$6.31
Southeast	$3.36	$4.09	$4.20	$4.35	$1.40	$1.47	$1.45	$1.48	$4.76	$5.56	$5.65	$5.83
Southwest	$3.66	$4.17	$4.45	$4.49	$1.41	$1.46	$1.49	$1.55	$5.07	$5.63	$5.94	$6.03
Rocky Mountains	$4.13	$4.99	$5.04	$4.91	$1.52	$1.58	$1.51	$1.48	$5.65	$6.57	$6.55	$6.39
Far West	$3.31	$4.01	$4.09	$3.90	$1.50	$1.54	$1.52	$1.45	$4.81	$5.55	$5.61	$5.35
Total	$3.51	$4.15	$4.25	$4.11	$1.51	$1.54	$1.54	$1.51	$5.02	$5.69	$5.79	$5.63

These results were also somewhat dynamic between 2008 and 2011, with changes reflecting the recent recession.

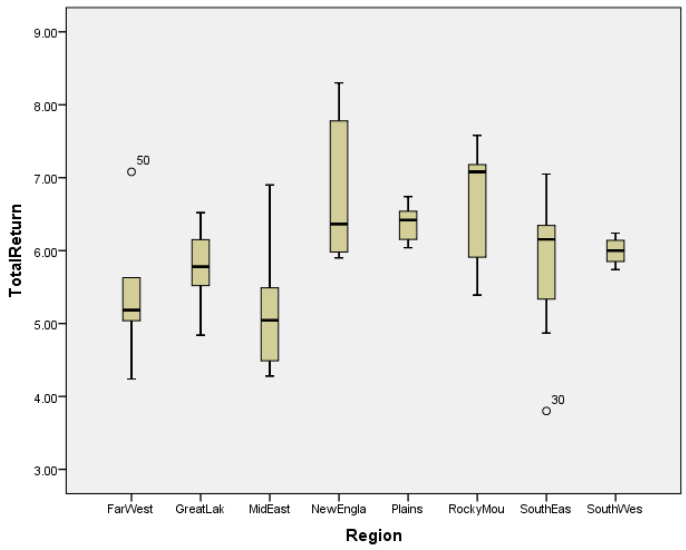
Figure 1 Total Return by Region



However, almost all the cost benefit studies lacked one or more of the elements needed for statistical meta-analysis, *including 1) operational definitions of each of the variables, 2) means and standard deviations, 3) the number of responses for each variable, 4) a clear description of the relationships between the variables, including the precise level of significance associated with the effect size observed, and (5) an explicit description of the study population and the unit of analysis.*

The Public Libraries in the United States State Summary file data were more promising and amenable to meta-analysis*. The units of analysis in the surveys were uniform and consistent. The means and standard deviations could be calculated, and outliers could be detected. The variables were accompanied by operational definitions. The number of responses for each variable was known, and for the most part these data were well described and documented.*

Figure 2: Dispersion of Regional Values Developed Using SC impact Study Algorithm



When a meta-analysis was conducted using the SC Public Library Economic Impact Study algorithm, the results indicated that the regional benefits likely to result from a one dollar investment ranged from $5.99 to 6.24.

Figure 3: Meta-Analysis of Total Value by Region

		Statistics for Each Study							Mean and 95% CL					
Model	Region	Mean	Standard Error	Variance	Low Limit	Upper Limit	Z-Value	pValue	-1.00	-0.50	0.00	0.50	1.00	Relative Weight
	Far West	5.393	0.385	0.148	4.639	6.148	14.009	0.000						2.73
	Grt Lakes	5.762	0.286	0.082	5.202	6.322	20.158	0.000						4.95
	Mid East	5.208	0.382	0.146	4.460	5.957	13.639	0.000						2.78
	NewEng	6.782	0.413	0.170	5.973	7.591	16.430	0.000						2.38
	Plain	6.370	0.100	0.010	6.174	6.566	63.807	0.000						40.61
	Rocky	6.628	0.416	0.173	5.812	7.444	15.927	0.000						2.34
	S East	5.809	0.252	0.064	5.315	6.304	23.032	0.000						6.36
	S West	5.995	0.103	0.011	5.792	8.198	57.979	0.000						37.86
Fixed		6.119	0.064	0.004	5.994	6.244	96.185	0.000						

Major Findings

- *The economic value of public libraries continues to be of strong interest to those responsible for public library services and the advocates who work diligently to preserve the quality and availability of these services. This need is particularly important in instances where public officials are routinely faced with decisions concerning the use of public funds and the need to maximize the benefit of those funds.*

- *The literature review and analysis performed for project META suggest a pattern of positive and mounting evidence concerning the contributions that public libraries make to the prosperity of their communities. Based on this work, it is reasonable to assert that Americans typically receive benefits in the range of $5 to $6 for every $1 they spend on public library services.*

- *It is also reasonable to assert that these figure may undervalue their target and that more accurate and persuasive figures could be developed through 1) closer attention to the intangible benefits, such as improvements in childhood literacy and community engagement, which have traditionally figured in advocacy arguments, 2) the development of improved reporting standards, and 3) greater methodological consistency.*

- *These critical improvements in reporting and analysis are important for several reasons. Based on recent experiences, it possible to say that we have moved to a point where single arguments are no longer persuasive. Administrators and library advocates arriving at meetings holding a single card, whether economic or traditional, are unlikely to walk away winners. Those who draw from a deck of complementary measures are more likely to be successful, and those who can fashion a shrewd hand that corresponds to the needs and interests of their funding bodies and community leaders are likely to take the prize.*

- *With this in mind, we are not suggesting that the preliminary results concerning the economic value of public libraries described in this paper are adequate to make the case for public libraries. We do suggest that they can be influential when added to the powerful narratives and arguments that have sustained U.S. public libraries for nearly one and one-half centuries.*

Recommendations

The results of the META Project suggest that the field of library valuation has a promising future that can be strengthened through additional research and expected to provide meaningful information that will be useful to library professionals, advocates, and decision-makers. To realize this promise and to build upon the findings of this report, the following steps are recommended:

- *The first,* ***the production of a new group of studies*** *that are suitable for meta-analysis, requires an ongoing research agenda that results in a new research corpus that meets more rigorous reporting standards and statistical requirements, including variables that are adequately defined and measured, accurate reports of the sample sizes that figure in the analyses, the magnitude of test statistics observed, and other relevant information.*

- *The second,* ***adoption of a more collaborate approach****, has much to offer. The SC economic impact model used in this report was chosen as a matter of convenience and for the purpose of example, but is not necessarily the best or right one for these types of calculations. A more versatile or encompassing group of calculations could be developed through professional consensus, and a cooperative approach could result in an interview protocol that would produce more comparable data and results that would be more generalizable.*

- *The third, and perhaps most fruitful step,* ***a more careful look at the intangible outcomes and benefits,*** *would result in more accurate value assessments. These factors are typically not taken into account in cost benefit estimates because they are considered more difficult to measure. However, they tend to resonate in discussions of local policy objectives and have been successfully explored in other academic disciplines. Further attention to these studies and the development of interdisciplinary partnerships consequently appear to have much to offer.*

UPON THE OBJECTS TO BE ATTAINED BY

THE ESTABLISHMENT OF A PUBLIC LIBRARY

Report of the Trustees of the Public Library of the City of Boston 1852

City Document - No. 37.

REPORT

OF

THE TRUSTEES

OF THE

PUBLIC LIBRARY

OF THE

CITY OF BOSTON

JULY, 1852.

BOSTON:

1852.

J.H. EASTBURN, CITY PRINTER.

CITY OF BOSTON.

In Board of Mayor and Aldermen, June 30, 1852.

Ordered, That the Trustees of the City Library be requested to report to the City Council upon the objects to be attained by the establishment of a Public Library, and the best mode of effecting them; and that they be authorized to report in print.

Passed. Sent down for concurrence.

BENJAMIN SEAVER, Mayor.

In Common Council, July 1, 1852.

Concurred.

HENRY J. GARDNER, President.

A true Copy. Attest:

S. F. McCLEARY, JR., City Clerk.nnn

REPORT.

The Trustees of the public library, in compliance with the order of the two branches of the City Council, submit the following report on the objects to be attained by the establishment of a public library and the best mode of effecting them : –

Of all human arts that of writing, as it was one of the earliest invented, is also one of the most important. Perhaps it would be safe to pronounce it, without exception the most useful and important. It is the great medium of communication between mind and mind, as respects different individuals, countries, and periods of time. We know from history that only those portions of the human family have made any considerable and permanent progress in civilization, which have possessed and used this great instrument of improvement.

It is principally in the form of books that the art of writing, though useful in many other ways, has exerted its influence on human progress. It is almost exclusively by books that a permanent record has been made of word and deed, of thought and feeling; that history, philosophy and poetry, that literature and science in their full comprehension, have been called into being, by the co-operation of intellects acting in concert with each other, though living in different countries and at different periods, and often using different languages.

Till the middle of the fifteenth century of our era, it was literally the *art of writing* by which these effects were produced. No means of multiplying books was known but the tedious process of transcription. This of course rendered them comparatively scarce and dear, and thus greatly limited their usefulness. It was a chief cause also of the loss of some of the most valuable literary productions. However much this loss may be regretted, we cannot but reflect with wonder and gratitude on the number of invaluable works which have been handed down to us from antiquity, notwithstanding the cost and labor attending their multiplication.

The same cause would necessarily operate to some extent against the formation of public and private libraries. Still however, valuable collections of books were made in all the cultivated states of antiquity, both by governments and individuals. The library formed by the Ptolemies at Alexandria in Egypt was probably the direct means by which the most valuable works of ancient

literature have been preserved to us. At a later period, the collections of books in the religious houses contributed efficaciously toward the same end.

The invention of printing in the fifteenth century increased the efficiency of the art of writing, as the chief instrument of improvement, beyond all former example or conception. It became more than ever the great medium of communication and transmission. It immediately began to operate, in a thousand ways and with a power which it would be impossible to overstate, in producing the great intellectual revival of the modern world. One of the most obvious effects of the newly invented art was of course greatly to facilitate the formation of libraries.

An astonishing degree of excellence in the art of printing was reached at once. The typography of the first edition of the whole Bible is nearly equal to that of any subsequent edition. But the farther improvements which have taken place in four hundred years in cutting and casting types and solid pages, in the construction of presses and their movement by water, steam, and other power, in the manufacture of paper, and in the materials and mode of binding, have perhaps done as much to make books cheap and consequently abundant, as the art of printing as originally invented.

It is scarcely necessary to add that these causes have led to a great multiplication of libraries in Europe and America. In nearly all the capitals of Europe large collections of books have been made and supported at the public expense. They form a part of the apparatus of all the higher institutions for education, and latterly of many schools; they are found in most scientific and literary societies; and they are possessed by innumerable individuals in all countries.

In proportion as books have become more abundant, they have become the principal instrument of instruction in places of education. It may be doubted whether their employment for this purpose is not, particularly in this country, carried too far. The organization of modern schools, in which very large numbers of pupils are taught by a small number of instructors, tends to make the use of books, rather than the living voice of the teacher, the main dependence. Still however, this is but an abuse of that which in itself is not only useful but indispensable; and no one can doubt that books will ever continue to be, as they now are, the great vehicle of imparting and acquiring knowledge and carrying on the work of education. As far as instruction is concerned, it will no doubt ever continue to be, as it now is, the work of the teacher to direct, encourage, and aid the learner in the use of his books.

In this respect the system of public education in Boston may probably sustain a comparison with any in the world. Without asserting that the schools are perfect, it may truly be said that the general principle and plan on which they are founded, are as nearly so as the nature of the case admits. They compose a great system of instruction, administered in schools rising in gradation from the most elementary to those of a highly advanced character, open to the whole population, and supported by a most liberal public expenditure. The schools themselves may admit improvement, and the utmost care should be taken, that they keep pace with the progress of improvement in other things; but the system itself, in the great features just indicated, seems perfect; that is, in a word, to give a first rate school education, at the public expense, to the entire rising generation.

But when this object is attained, and it is certainly one of the highest importance, our system of public instruction stops. Although the school and even the college and the university are, as all thoughtful persons are well aware, but the first stages in education, the public makes no provision for carrying on the great work. It imparts, with a noble equality of privilege, a knowledge of the elements of learning to all its children, but it affords them no aid in going beyond the elements. It awakens a taste for reading, but it furnishes to the public nothing to be read. It conducts our young men and women to that point, where they are qualified to acquire from books the various knowledge in the arts and sciences which books contain; but it does nothing to put those books within their reach. As matters now stand, and speaking with general reference to the mass of the community, the public makes no provision whatever, by which the hundreds of young persons annually educated, as far as the elements of learning are concerned, at the public expense, can carry on their education and bring it to practical results by private study.

We do not wish to exaggerate in either part of this statement, although we wish to call attention to the point as one of great importance and not yet, as we think, enough considered. We are far from intimating that school education is not important because it is elementary; it is, on the contrary, of the utmost value. Neither do we say, on the other hand, because there are no libraries which in the strict sense of the word are public, that therefore there is absolutely no way by which persons of limited means can get access to books. There are several libraries of the kind usually called public, belonging however to private corporations; and there are numerous private libraries from which books are liberally loaned to those wishing to borrow them.

It will however be readily conceded that this falls far short of the aid and encouragement which would be afforded to the reading community, (in which we include all persons desirous of obtaining knowledge or an agreeable employment of their time from the perusal of books), by a well supplied public library. If we had no free schools, we should not be a community without education. Large numbers of children would be educated at private schools at the expense of parents able to afford it, and considerable numbers in narrow circumstances would, by the aid of the affluent and liberal, obtain the same advantages. We all feel however that such a state of things would be a poor substitute for our system of public schools, of which it is the best feature that it is a public provision for all; affording equal advantages to poor and rich; furnishing at the public expense an education so good, as to make it an object with all classes to send their children to the public schools.

It needs no argument to prove that, in a republican government, these are features of the system, quite as valuable as the direct benefit of the instruction which it imparts. But it is plain that the same principles apply to the farther progress of education, in which each one must he mainly his own teacher. Why should not this prosperous and liberal city extend some reasonable amount of aid to the foundation and support of a noble public library, to which the young people of both sexes, when they leave the schools, can resort for those works which pertain to general culture, or which are needful for research into any branch of useful knowledge? At present, if the young machinist, engineer, architect, chemist, engraver, painter, instrument-maker, musician (or student of any branch of science or literature,) wishes to consult a valuable and especially a rare and costly work, he must buy it, often import it at an expense he can ill afford, or he must be indebted for its use to the liberality of private corporations or individuals. The trustees submit,

that all the reasons which exist for furnishing the means of elementary education, at the public expense, apply in an equal degree to a reasonable provision to aid and encourage the acquisition of the knowledge required to complete a preparation for active life or to perform its duties.

We are aware that it may be said and truly, that knowledge acquired under hardships is often more thorough, than that to which the learner is invited without effort on his part; that the studious young man who makes sacrifices and resorts to expedients to get books, values them the more and reads them to greater profit. This however is equally true of school education and of every other privilege in life. But the city of Boston has never deemed this a reason for withholding the most munificent appropriations for the public education. It has not forborne to support an expensive system of free schools, because without such a system a few individuals would have acquired an education for themselves, under every possible discouragement and disadvantage, and because knowledge so acquired is usually thorough, well-digested and available, beyond what is got in an easier way. The question is not what will be brought about by a few individuals of indomitable will and an ardent thirst for improvement, but what is most for the advantage of the mass of the community. In this point of view we consider that a large public library is of the utmost importance as the means of completing our system of public education.

There is another point of view in which the subject may be regarded, – a point of view, we mean, in which a free public library is not only seen to be demanded by the wants of the city at this time, but also seen to be the next natural step to be taken for the intellectual advancement of this whole community and for which this whole community is peculiarly fitted and prepared.

Libraries were originally intended for only a very small portion of the community in which they were established, because few persons could read, and fewer still desired to make inquires that involved the consultation of many books. Even for a long time after the invention of printing, they were anxiously shut up from general use; and, down to the present day, a large proportion of the best libraries in the world forbid anything like a free circulation of their books ; – many of them forbidding any circulation at all.

For all this, there were at first, good reasons, and for some of it good reasons exist still. When only manuscripts were known, those in public libraries were, no doubt, generally too precious to be trusted from their usual places of deposit ; and the most remarkable, if not the most valuable, of all such collections now in existence – the Laurentian in Florence – still retains, and perhaps wisely, its eight or nine thousand manuscripts chained to the desks on which they lie. So too, when printed books first began to take the place of manuscripts, the editions of them were small and their circulation limited. When, therefore, copies of such books now occur, they are often regarded rightfully as hardly less curious and valuable than manuscripts, and as demanding hardly less care in their preservation. And finally, even of books more recently published, some, – like Dictionaries and Cyclopædias, – are not intended for circulation by means of public libraries, and others are too large, too costly, or otherwise too important to be trusted abroad, except in rare cases.

But while there are some classes of books that should be kept within the precincts of a public library, there are others to which as wide a circulation as possible should be given; books which, in fact, are especially intended for it, and the end of whose existence is defeated, just in

proportion as they are shut up and restrained from general use. It was, however, long after this class was known, before it became a large one, and still longer before means were found fitted to give to the community a tolerably free use of it. At first it consisted almost exclusively of practical, religious books. Gradually the more popular forms of history, books of travel, and books chiefly or entirely intended for entertainment followed. At last, these books became so numerous, and were in such demand, that the larger public libraries, – most of which had grown more or less out of the religious establishments of the middle ages, and had always regarded with little interest this more popular literature, – could not, it was plain, continue to be looked upon as the only or as the chief resource for those who were unable to buy for themselves the reading they wanted. Other resources and other modes of supply have, therefore, been at different times devised.

The first, as might naturally have been anticipated, was suggested by the personal interest of a sagacious individual. Allan Ramsay, who, after being bred a wig-maker, had become a poet of the people, and set up a small bookseller's shop, was led to eke out an income, too inconsiderable for the wants of his family, by lending his books on hire to those who were not able or not willing to buy them of him. This is the oldest of all the numberless "Circulating Libraries;" and it sprang up naturally in Edinburg, where in proportion to the population, it is believed there were then more readers than there were in any other city in the world. This was in l725; and, twenty years ago, the same establishment was not only in existence – as it probably is still – but it was the largest and best of its class in all Scotland. The example was speedily followed. Such libraries were set up everywhere, or almost everywhere in Christendom, but especially in Germany and in Great Britain, where they are thus far more numerous than they are in any other countries; the most important being now in London, where (for at least one of them) from fifty to two hundred copies of every good new work, are purchased in order to satisfy the demands of its multitudinous subscribers and patrons.

All "Circulating Libraries," technically so called, are however, to be regarded as adventures and speculations for private profit. On this account, they were early felt to be somewhat unsatisfactory in their very nature, and other libraries were contrived that were founded on the more generous principle of a mutual and common interest in those who wished to use the books they contained. This principle had, in fact, been recognized somewhat earlier than the time of Allan Ramsay, but for very limited purposes and not at all for the *circulation* of books. Thus the lawyers of Edinburg, London, and Paris, respectively had already been associated together for the purpose of collecting *consulting* Law Libraries for their own use, and so it is believed, had some other bodies, which had collected consulting libraries for their own exclusive especial purposes. But the first *Social Library* of common or popular books for popular use, in the sense we now give the appellation, was probably that of the "Library Company," as it was called, in Philadelphia, founded at the suggestion of Dr. Franklin in 1731, by the young mechanics of that city, where he was then a young printer. The idea was no doubt a fortunate one; particularly characteristic of Franklin's shrewd good sense, and adapted to the practical wants of our own country. The library of these young men, therefore, succeeded and was imitated in other places. Even before the Revolutionary war, such libraries were established elsewhere in the colonies, and, after its conclusion, many sprang up on all sides. New England, in this way, has come to possess a great number of them, and especially Massachusetts; two-thirds of whose towns are said at this time, to possess "Social Libraries," each owned by a moderate number of proprietors.

That these popular "Social Libraries" have done great good, and that many of them are still doing great good, cannot be reasonably doubted. But many of them, – perhaps the majority in this Commonwealth, – are now languishing. For this, there are two reasons. In the first place, such libraries are accessible only to their proprietors, who are not always the persons most anxious to use them, or, in some cases, but not many, they are accessible to other persons on payment of a small sum for each book borrowed. And, in the second place, they rarely contain more than one copy of a book, so that if it be a new book, or one in much demand, many are obliged to wait too long for their turn to read it; so long that their desire for the book is lost, and their interest in the library diminished. Efforts, therefore, have been for some time making, to remedy these deficiencies, and to render books of different kinds more accessible to all, whether they can pay for them or hire them, or not.

Thus, within thirty years, Sunday School Libraries have been everywhere established; but their influence – great and valuable as it is – does not extend much beyond the youngest portions of society and their particular religious teachers. And, within a shorter period than thirty years, District or Public School Libraries have been scattered all over the great State of New York, and all over New England, in such abundance, that five years ago, (1847) the aggregate number of their books in the State of New York was above a million three hundred thousand volumes, and fast increasing; but neither do these school libraries generally contain more than one copy of any one book, nor is their character often such as to reach and satisfy the mass of adult readers.

Strong intimations, therefore, are already given, that ampler means and means better adapted to our peculiar condition and wants, are demanded, in order to diffuse through our society that knowledge without which we have no right to hope, that the condition of those who are to come after us will be as happy and prosperous as our own. The old roads, so to speak, are admitted to be no longer sufficient. Even the more modern turnpikes do not satisfy our wants. We ask for rail-cars and steamboats, in which many more persons – even multitudes – may advance together to the great end of life, and go faster, further and better, by the means thus furnished to them, than they have ever been able to do before.

Nowhere are the intimations of this demand more decisive than in our own city, nor, it is believed, is there any city of equal size in the world, where added means for general popular instruction and self-culture, – if wisely adapted to their great ends, – will be so promptly seized upon or so effectually used, as they will be here. One plain proof of this is, the large number of good libraries we already possess, which are constantly resorted to by those who have the right, and which yet – it is well known, – fail to supply the demand for popular reading. For we have respectable libraries of almost every class, beginning with those of the Athenæum, of the American Academy, of the Historical Society, and of the General Court, – the Social Library of 1792, the Mercantile Library, the Mechanics Apprentices' Library, the Libraries of the Natural History Society, of the Bar, of the Statistical Association, of the Genealogical Society, of the Medical Society, and of other collective and corporate bodies; and coming down to the "Circulating Libraries" strictly so called ; the Sunday School Libraries, and the collections of children's books found occasionally in our Primary Schools. Now all these are important and excellent means for the diffusion of knowledge. They are felt to be such, and they are used as such, and the trustees would be especially careful not to diminish the resources or the influence of any one of them. They are sure that no public library can do it. But it is admitted, – or else

another and more general library would not now be urged, – that these valuable libraries do not, either individually or in the aggregate, reach the great want of this city, considered as a body politic bound to train up its members in the knowledge which will best fit them for the positions in life to which they may have been born, or any others to which they may justly aspire through increased intelligence and personal worthiness. For multitudes among us have no right of access to any one of the more considerable and important of these libraries; and, except in rare instances, no library among us seeks to keep more than a single copy of any book on its shelves, so that no one of them, nor indeed, all of them taken together, can do even a tolerable amount of what ought to be done towards satisfying the demands for healthy, nourishing reading made by the great masses of our people, who cannot be expected to purchase such reading for themselves.

And yet there can be no doubt that such reading ought to be furnished to all, as a matter of public policy and duty, on the same principle that we furnish free education, and in fact, as a part, and a most important part, of the education of all. For it has been rightly judged that, – under political, social and religious institutions like ours, – it is of paramount importance that the means of general information should be so diffused that the largest possible number of persons should be induced to read and understand questions going down to the very foundations of social order, which are constantly presenting themselves, and which we, as a people, are constantly required to decide, and do decide, either ignorantly or wisely. That this *can* be done, – that is, that such libraries can be collected, and that they will be used to a much wider extent than libraries have ever been used before, and with much more important results, there can be no doubt; and if it can be done *anywhere,* it can be done *here* in Boston; for no population of one hundred and fifty thousand souls, lying so compactly together as to be able, with tolerable convenience, to resort to one library, was ever before so well fitted to become a reading, self-cultivating population, as the population of our own city is at this moment.

To accomplish this object, however, – which has never yet been attempted, – we must use means which have never before been used; otherwise the library we propose to establish, will not be adjusted to its especial purposes. Above all, while the rightful claims of no class, – however highly educated already, – should be overlooked, the first regard should be shown, as in the case of our Free Schools, to the wants of those, who can, in no other way supply themselves with the interesting and healthy reading necessary for their farther education. What precise plan should be adopted for such a library, it is not, perhaps, possible to settle beforehand. It is a new thing, a new step forward in general education; and we must feel our way as we advance. Still, certain points seem to rise up with so much prominence, that without deciding on any formal arrangement, until experience shall show what is practically useful-we may perhaps foresee that such a library as is contemplated would naturally fall into four classes, viz:

I. *Books that cannot be taken out of the Library,* such as Cyclopædias, Dictionaries, important public documents, and books, which, from their rarity or costliness, cannot be easily replaced. Perhaps others should be specifically added to this list, but after all, the Trustees would be sorry to exclude any book whatever so absolutely from circulation that, by permission of the highest authority having control of the library, it could not, in special cases, and with sufficient pledges for its safe and proper return, be taken out. For a book, it should be remembered, is never so much in the way of its duty as it is when it is in hand to be read or consulted.

II. *Books that few persons will wish to read,* and of which, therefore, only one copy will be kept, but which should be permitted to circulate freely, and if this copy should, contrary to expectation, be so often asked for, as to be rarely on the shelves, another copy should then be bought, – or if needful, more than one other copy, – so as to keep one generally at home, especially if it be such a book as is often wanted for use there.

III. *Books that will be often asked for,* (we mean, the more respectable of the popular books of the time,) of which copies should be provided in such numbers, that *many* persons, if they desire it, can be reading the same work at the same moment, and so render the pleasant and healthy literature of the day accessible to the whole people at the only time they care for it, – that is, when it is living, fresh and new. Additional copies, therefore, of any book of this class should continue to be bought almost as long as they are urgently demanded, and thus, by following the popular taste, – unless it should ask for something unhealthy, – we may hope to create a real desire for general reading; and, by permitting the freest circulation of the books that is consistent with their safety, cultivate this desire among the young, and in the families and at the firesides of the greatest possible number of persons in the city.

An appetite like this, when formed, will, we fully believe, provide wisely and well for its own wants. The popular, current literature of the day can occupy but a small portion of the leisure even of the more laborious parts of our population, provided there should exist among them a love for reading as great, for instance, as the love for public lecturing, or for the public schools; and when such a taste for books has once been formed by these lighter publications, then the older and more settled works in Biography, in History, and in the graver departments of knowledge will be demanded. That such a taste can be excited by such means, is proved from the course taken in obedience to the dictates of their own interests, by the publishers of the popular literature of the time during the last twenty or thirty years. The Harpers and others began chiefly with new novels and other books of little value. What they printed, however, was eagerly bought and read, because it was cheap and agreeable, if nothing else. A habit of reading was thus formed. Better books were soon demanded, and gradually the general taste has risen in its requisitions, until now the country abounds with respectable works of all sorts, – such as compose the three hundred volumes of the Harpers' School Library and the two hundred of their Family Library – which are read by great numbers of our people everywhere, especially in New England and in the Middle States. This taste, therefore, once excited will, we are persuaded, go on of itself from year to year, demanding better and better books, and, can as we believe, by a little judicious help in the selections for a Free City Library, rather than by any direct control, restraint, or solicitation, be carried much higher than has been commonly deemed possible; preventing at the same time, a great deal of the mischievous, poor reading now indulged in, which is bought and *paid* for, by offering good reading, *without pay*, which will be attractive.

Nor would the process by which this result is to be reached a costly one; certainly not costly compared with its benefits. Nearly all the most popular books are, from the circumstance of their popularity, cheap, – most of them very cheap, – because large editions of them are printed that are suited to the wants of those who cannot afford to buy dear books. It may, indeed, sometimes be necessary to purchase many copies of one of these books, and so the first outlay, in some cases, may seem considerable. But such a passion for any given book does not last long, and, as it subsides, the extra copies may be sold for something, until only a few are left in the library, or

perhaps, only a single one, while the money received from the sale of the rest, – which, at a reduced price, would, no doubt often be bought of the Librarian by those who had been most interested in reading them, – will serve to increase the general means for purchasing others of the same sort. The plan, therefore, it is believed, is a practicable one, so far as expense is concerned, and will, we think, be found on trial, much cheaper and much easier of execution than at the first suggestion, it may seem to be.

IV. The last class of books to be kept in such a library, consists, we suppose, of *periodical publications,* probably excluding newspapers, except such as may be given by their proprietors. Like the first class, they should not be taken out at all, or only in rare and peculiar cases, but they should be kept in a Reading Room accessible to everybody; open as many hours of the day as possible, and always in the evening; and in which all the books on the shelves of every part of the Library should be furnished for perusal or for consultation to all who may ask for them, except to such persons as may, from their disorderly conduct or unseemly condition, interfere with the occupations and comfort of others who may be in the room.

In the establishment of such a library, a beginning should be made, we think, without any sharply defined or settled plan, so as to be governed by circumstances as they may arise. The commencement should be made, of preference, in a very unpretending manner; erecting no new building and making no show; but spending such moneys as may be appropriated for the purpose, chiefly on books that are known to be really wanted, rather than on such as will make an imposing, a scientific or a learned collection; trusting, however, most confidently, that such a library, in the long run, will contain all that anybody can reasonably ask of it. For, to begin by making it a really useful library; by awakening a general interest in it as a City Institution, important to the whole people, a part of their education, and an element of their happiness and prosperity, is the surest way to make it at last, a great and rich library for men of science, statesmen and scholars, as well as for the great body of the people, many of whom are always successfully struggling up to honorable distinctions and all of whom should be encouraged and helped to do it. Certainly this has proved to be the case with some of the best libraries yet formed in the United States, and especially with the Philadelphia Library, whose means were at first extremely humble and trifling, compared with those we can command at the outset. Such libraries have in fact enjoyed the public favor, and become large, learned, and scientific collections of books, exactly in proportion as they have been found generally useful.

As to the terms on which access should be had to a City Library, the Trustees can only say, that they would place no restrictions on its use, except such as the nature of individual books, or their safety may demand; regarding it as a great matter to carry as many of them as possible into the home of the young; into poor families; into cheap boarding houses; in short, wherever they will be most likely to affect life and raise personal character and condition. To many classes of persons the doors of such a library may, we conceive, be at once opened wide. All officers of the City Government, therefore, including the police, all clergymen settled among us, all city missionaries, all teachers of our public schools, all members of normal schools, all young persons who may have received medals or other honorary distinctions on leaving our Grammar and higher schools, and, in fact, as many classes, as can safely be entrusted with it *as classes,* might enjoy, on the mere names and personal responsibility of the individuals composing them, the right of taking out freely all books that are permitted to circulate, receiving one volume at a

time. To all other persons, women as well as men – living in the City, the same privilege might be granted on depositing the value of the volume or of the set to which it may belong; believing that the pledge of a single dollar or even less, may thus insure pleasant and profitable reading to any family among us.

In this way the Trustees would endeavor to make the Public Library of the City, as far as possible, the crowning glory of our system of City Schools; or in other words, they would make it an institution, fitted to continue and increase the best effects of that system, by opening to all the means of self culture through books, for which these schools have been specially qualifying them.

Such are the views entertained by the Trustees, with reference to the objects to be attained by the foundation of a public library and the mode of effecting them.

It remains to be considered briefly what steps should be adopted toward the accomplishment of such a design.

If it were probable that the City Council would deem it expedient at once to make a large appropriation for the erection of a building and the purchase of an ample library, and that the citizens at large would approve such an expenditure, the Trustees would of course feel great satisfaction in the prompt achievement of an object of such high public utility. But in the present state of the finances of the city, and in reference to an object on which the public mind is not yet enlightened by experience, the Trustees regard any such appropriation and expenditure as entirely out of the question. They conceive even that there are advantages in a more gradual course of measures. They look, therefore, only to the continuance of such moderate and frugal expenditure, on the part of the city, as has been already authorized and commenced, for the purchase of books and the compensation of the librarian; and for the assignment of a room or rooms in some one of the public buildings belonging to the city for the reception of the books already on hand, or which the Trustees have the means of procuring. With aid to this extent on the part of the city, the Trustees believe that all else may be left to the public spirit and liberality of individuals. They are inclined to think that, from time to time, considerable collections of books will be presented to the library by citizens of Boston, who will take pleasure in requiting in this way the advantages which they have received from its public institutions, or who for any other reason are desirous of increasing the means of public improvement. Besides the collections of magnitude and value, which can hardly fail in the lapse of years to be received in this way, it may with equal confidence be expected, that constant accessions will be made to the public library by the donation of single volumes or of small numbers of books, which, however inconsiderable in the single case, become in the course of time, an important source of increase to all public libraries. A free city library, being an object of interest to the entire population, would in this respect have an advantage over institutions which belong to private corporations. Authors and editors belonging to Boston would generally deem it a privilege to place a copy of their works on the shelves of a public library; and the liberal publishers of the city, to whose intelligence and enterprise the cause of literature and science has at all times owed so much, would unquestionably show themselves efficient friends and benefactors.

In fact, we know of no undertaking more likely, when once brought into promising operation, to enlist in its favor the whole strength of that feeling, which, in so eminent a degree, binds the citizens of Boston to the place of their birth or adoption. In particular the Trustees are disposed to think that there is not a parent in easy circumstances who has had a boy or a girl educated at a public school, nor an individual who has himself enjoyed that privilege, who will not regard it at once as a duty and a pleasure to do something, in this way, to render more complete the provision for public education.

In order to put the library into operation with the least possible delay, the Trustees would propose to the city government to appropriate for this purpose the ground floor of the Adams school house in Mason street. They are led to believe that it will not be needed for the use of the Normal School proposed to be established in this building. It may be made, at a small expense, to afford ample accommodation for four or five thousand volumes, with an adjoining room for reading and consulting books, and it will admit of easy enlargement to twice its present dimensions. Such an apartment would enable the Trustees at once to open the library with five thousand volumes, a collection of sufficient magnitude to afford a fair specimen of the benefits of such an establishment to the city.

Should it win the public favor, as the Trustees cannot but anticipate, it will soon reach a size, which will require enlarged premises. These, as we have said, can be easily provided by the extension of the present room on the ground floor; and it will be time enough, when the space at command is filled up, to consider what further provision need be made for the accommodation of the library. Should the expectation of the Trustees be realized, and should it be found to supply an existing defect in our otherwise admirable system of public education, its future condition may be safely left to the judicious liberality of the city government and the public spirit of the community.

BENJAMIN SEAVER,
SAMPSON REED,
LYMAN PERRY,
JAMES LAWRENCE,
EDWARD S. ERVING,
JAMES B. ALLEN,
GEORGE W. WARREN,
GEORGE WILSON,
EDWARD EVERETT,
GEORGE TICKNOR,
JOHN P. BIGELOW,
NATHANIEL B. SHURTLEFF,
THOMAS G. APPLETON.

Boston, July 6, 1852.

Boston, July 26, 1852.

At a meeting of the Trustees of the Public Library held on the 6th instant, the foregoing Report was submitted by a SubCommittee previously appointed for that purpose, consisting of EDWARD EVERETT, GEORGE TICKNOR, SAMPSON REED, and NATHANIEL B. SHURTLEFF, and was unanimously accepted and ordered to be printed.

GEORGE WILSON, *Secretary*

Appendix B
Sample CV Questions

Contingent Valuation Analysis (CVA): A Brief Introduction with Sample Questions

Contingent valuation analysis (CVA) is a methodology in common use by researchers interested in assigning monetary values to the use of library services and facilities by users (and, occasionally non-users). These values are based (contingent) on the responses provided by the persons being interviewed using a formal survey instrument. To assure the generalizability of the findings, these persons are best selected using some type of random sampling process from, for example, a list or database of library card holders. Two types of questions are most common in CVA surveys: willingness to pay (WTP) and willingness to accept (WTA). WTP asks respondents what they are willing to pay for specific library services. WTA asks respondents what they would be willing to accept to give up specific library services that they currently have. The WTP approach is considered more reliable because WTA estimates of value tend to be higher than WTP estimates. In the sample questions listed here only WTP type questions are included.

A CVA survey needs to be carefully constructed and coordinated with the approval and cooperation of the local library. Decisions should be made early in the process regarding sample size, the sample population, the sampling method such as stratification by age, education, or user groups, the type of survey process that will be used (e.g., telephone, in-person, by computer, or some combination of these), the services to include, what demographic information is desired for analysis purposes, and how the findings will be reported and used. Most survey researchers strongly advise developing a survey format that can be easily adapted for computer input to a spreadsheet or statistical analysis software.

A caveat in doing surveys is to assure respondents that all answers will be kept completely confidential and no results will be reported that identify them as individuals. It is usually also important to not survey anyone under 18 years of age unless written permission is given by the parent or guardian.

Examples of Survey Questions

Type 1: Demographic Questions

The purpose of this type of question is to provide good profiles of respondents for later statistical analysis of findings. They are usually asked at either the beginning or the end of the survey. For CVA library survey purposes, the following are important categories to include: gender, age, occupation (by general census categories), household income (by rough categories), geographical location, presence of

children in the household (including how many and approximate ages), and distance to nearest library branch/bookmobile.

Respondents' answers to demographic questions about occupation is also a good time to identify, usually for later follow-up, specific groups of individuals that warrant further study. Examples are: teachers, business owners, medical staff, farmers, students, home schooling parents.

Type 2: Library Use Questions

These questions may be combined with the demographic questions or asked separately. Considerable thought should be given to the level of detail desired about specific library services or facilities use. For example, what level of detail should be obtained about use of library materials such as books, videos, games, magazines, newspapers, and encyclopedias? Similarly, what level of use of staff and facilities is needed, such as reference services, online databases, story hours, or free programs? Each of these questions could be important in obtaining a complete CVA analysis of library value—but also time-consuming to gather via a survey instrument. Most of these examples of questions may be broken down into more detail by asking questions about use by different age groups of children or adults.

1. Has anyone in your household used their library card in the last 12 months?
   ___yes
   ___no

2. If yes, then how was this use made (check all that apply):
   ___by physical visit to the library or a branch library
   ___by telephone
   ___by computer
   ___by use of a bookmobile

3. Approximately how many library uses of all types by all family members have taken place in the last ___ months (use your best guess as to number of uses by each):
   ___how many uses by children under 5 years of age
   ___how many uses by children ages 5-12
   ___how many uses by children ages 13-18
   ___how many uses by adults 19-25
   ___how many uses by adults 26-50
   ___how many uses by adults over 51 years of age

4. Library staff can perform many services for your family, including looking up answers to questions, recommending books to read, helping with homework, learning to search databases and the Internet, and many others. Please estimate the number of hours all members of your household spent using **library staff services** of any type in the last month: _____

5. Approximately how many books (in any format) did members of your household check out (or download) from the library in the past month? ____

6. Approximately how many different books (for any level reader from any source, including online) does your household buy on a monthly or annual basis?

   ____ number of books purchased monthly
   ____ number of books purchased annually

7. Approximately how many videos or movies (in any format) did members of your household check out from the library in the last month?

   ____ number of videos or movies checked out in the last month

8. Approximately how many videos or movies does your household purchase from any commercial source or service on an annual basis?

   ____ number of videos or movies purchased annually

9. About how many different magazines or newspapers (in any language) do members of your household examine or read when they visit the library during a year's time?

   ___magazines
   ___newspapers

10. How many different magazines or newspapers (in any language) does your household subscribe to during the year?

    ___ magazines

    ___newspapers

11. Check below if your household has for personal/family use the following:

    ___ a computer
    ___ a computer with Internet access
    ___ e-mail service

12. The library has a number of computers that are available for public use and these may be used for many different purposes, such as checking e-mail, surfing the Web, searching online databases, obtaining medical, legal, or consumer information, and many others. Approximately how many hours per month or week have members of your household used library computers in the last week or month?

    ____ number of hours this past week

    ____number of hours this past month

13. The library subscribes to a number of different commercial databases that index (and sometimes provide full text access) to the periodical literature that is available for students to use for their school work. Some are accessible only in a library branch and others may be searched from home by anyone with a library card. How many hours did members of your household spend in the last week or month searching or using these resources?

    ___ hours of use in the last week

    ___ hours of use in the last month

Disaster Scenario Questions

One of the techniques in CVA analysis is to present respondents with a scenario that says the library has been destroyed by some natural disaster that makes its services and facilities unavailable for some period of time. Questions are then asked about whether the respondents would replace library services with some commercial alternatives. Four examples are:

1. If the library was closed because of some natural disaster, would your household subscribe to a commercial service (such as ProQuest, ABI Inform, Dialog, Reference USA) that provided access to such materials as newspapers, magazines, and other electronic materials?
   ___yes
   ___no

2. Approximately how much would you be willing to spend for access to these commercial services in a month or year?

   ___per month

   ___per year

3. Suppose that you had been relying on the library for Internet access, computer classes, and e-mail access but these were now unavailable because of the library closing. Would you subscribe to commercial services to replace the library's services?

   ___yes

   ___no

4. If yes, how much would you be willing to pay to replace these services?

   ___per month

   ___annually

Summary Results of the 2002, 2008, 2009, and 2010 South Carolina Files

Note: all data are from the 2002 annual statistical report of the SC State Library, the 2008 annual statistical report of the SC State Library, the 2009 annual statistical report of the SC State Library, and the 2010 annual statistical report of the SC State Library.

Part I: Direct economic state-wide impacts (all public libraries)

Measure 1 - Direct State-wide Impacts

	2002	2008	2009	2010
Sum Total for the state	$79,914,285	$105,115,666	$109,421,314	$112,955,169
Minimum	$109,795	$146,750	$144,200	$141,870
Maximum	$11,646,359	$15,247,160	$16,901,686	$17,797,127
Average for the state	$1,949,129	$2,502,754	$2,605,269	$2,689,409

Calculating Formula for all studies: {(total operating expenses + total capital expenditures) - .75 of total collection expenditures)}.

Measure 2 - Total Non-tax Funds Received

New Concept

	2002	2008	2009	2010
Sum Total for the state	$4,730,215	$1,454,124	$9,140,764	$8,541,244
Minimum	$	$0	$0	$13,663
Maximum	$725,381	$374,077	$2,904,088	$1,436,419
Average for the state	$118,255	$40,392	$220,499	$203,362

Calculating Formula for 2002: {Sum of operating revenue (total federal funds) + operating revenue (other funds) + capital revenue (federal funds) + capital revenue (other funds)}. Calculating formula same for 2008; specifically: C20 + C21 + C24 + C25. Note: neither 2002 nor 2008 measure 2 includes fines, fees, other revenue (operating and non-recurring). Measure 2 for 2009 and 2010 includes fines, fees, and other revenue because those fields are no longer separately reported. Measure 2 for 2009 and 2010 also includes Lottery funds. Some libraries have missing data or zeros.

Measure 3 - Value of the loans of books and other materials

	2002	2008	2009	2010
Sum Total for the state	$64,415,630	$193,041,745	$211,935,652	$210,893,207
Minimum	$65,635	$269,606	$242,197	$179,324
Maximum	$12,000,000	$35,069,965	$38,657,865	$39,299,966
Average for the state	$1,657,683	$7,131,673	5,046,087	$5,021,267

Calculating Formula for 2002: (juvenile print + adult print) * $5.00 (half of the $10.00 average price of hardback or trade paperback in 2002). Calculating formula for 2008, 2009, and 2010: (juvenile print + adult print * $10.25) (1/4 of the $41 2008 average price of hardbacks and trade paperback books)

Part 3B - non-print materials

	2002	2008	2009	2010
Sum Total for the state	$24,071,990	$48,608,005	$54,234,485	$62,486,355
Minimum	$0	$24,824	$0	$0
Maximum	$7,829,075	$12,461,934	$13,683,497	$14,688,974
Average for the state	$617,231	$2,663,367	$1,291,297	$1,487,770

Calculating formula for 2002: (juvnopri + adunopri * $8.76), which was one-fourth of the 2002 average price of $35.00 for tape cassettes, compact discs and VHS cassettes. Calculating formula for 2008, 2009, and 2010: (juvenile non-print circulation + adult non-print circulation * $9.89), which is one fourth of the average 2008 price of $39.55 for compact discs.

Part 3C - magazines and newspapers

	2002	2008	2009	2010
Sum Total for the state	$4,142,000	$ 6,580,500	$6,264,300	$6,135,300
Minimum	$11,200	$11,700	$8,700	$9,000
Maximum	$596,400	$879,900	$914,400	$920,400
Average for the state	$101,024	$156,679	$149,150	$146,079

Calculating formula for 2002: (magazines and newspaper subscriptions total * $200.00), which was the average subscription price in 2002. Calculating formula for 2008, 2009 and 2010: (print subscriptions total + local electronic serial subscriptions * $300.00), which is one fourth of the average price of newspaper subscriptions and journal/magazine subscriptions for 2008.

Measure 4 - Value of reference questions answered

Estimate the value of reference questions (15 min=estimated average time to answer one reference question)

	2002	2008	2009	2010
Sum Total for the state	$13,134,909	$16,622,805	$18,360,663	$18,067,516
Minimum	$3,600	$3,349	$8,131	$859
Maximum	$3,758,418	$6,658,867	$7,212,941	$6,819,644
Average for the state	$320,364	$395,781	$437,159	$430,179

Calculating formula for 2002: (total annual reference transactions) * $3.00), which is one-fourth of the median SC hourly wage in 2002. Calculating formula for 2008: Var. H1 ((total annual reference transactions) * $3.46), which is one-fourth of the 2008 SC median hourly wage of $13.85. Calculating formula for 2009 and 2010: total annual reference transactions * one-fourth of the 2009 SC median hourly wage of $14.14.

Measure 5 - Measuring the value of in-library use of materials

The measure, in-library use of materials, was not collected for 2008. Based on the literature cited above it was decided to estimate this measure by taking 100% of the number of in-library users

	2002	New Concept 2008	2009	2010
Sum Total for the state	$10,351,105	$58,023,923	$64,004,466	$64,629,846
Minimum	$0	$86,500	$104,466	$110,734
Maximum	$1,763,193	$7,273,256	$8,096,578	$8,659,205
Average for the state	$272,398	$1,381,522	$1,523,916	$1,538,806

Calculating formula for 2002: Var. #115 (inlibuse) * $2.43 (which was ¼ of the 2002 SC median hourly wage) and sum for all libraries. Calculating formula for 2008: Var. #115(inlibuse) * $3.46 (which was ¼ of the 2008 SC median hourly wage) and sum for all libraries. Calculating formula for 2009 and 2010: inlibuse * ¼ of the 2009 SC median hourly wage of $14.14 and sum for all libraries.

Measure 6 - Measuring the value of programs conducted by the libraries in the state

	2002	2008	2009	2010
Sum Total for the state	$1,492,229	$8,409,614	$9,143,652	$9,697,244
Minimum	$134.00	$11,585	$13,437	$10,806
Maximum	$175,691	$1,532,608	$1,405,332	$1,236,246
Average for the state	$36,396	$200,229	$217,706	$230,887

Calculating formula for 2002: (total program attendance * $2.43), which was the estimated value of information received during a visit to the library, using an average visit time of 15 minutes. Calculating formula for 2008: (total program attendance * $10.39) which is the value of a 45-60 minutes program, using the 2008 hourly SC median wage of $13.85. Calculating formula for 2009 and 2010: total program attendance * .75 of the 2009 hourly SC median wage of $14.14. (This is program attendance by adults, young adult, and children.)

Measure 7: Value of Facilities and Equipment

	2002	2008	2009	2010
Sum Total for the state		$17,209,507	$20,736,653	$23,184,206
Minimum		$9,878	$39,311	$4,913
Maximum		$2,906,250	$3,305,374	$3,338,426
Average for the state		$419,744	$493,730	$552,005

Statistics for this measure were not kept for the 2002 SC public library data. Calculating formula for 2008, 2009, and 2010: (Total number of users of public Internet computers * $3.75), which is the average cost that Kinko's (FedEx) charges for 15 minutes of computer use.

Cumulative Listing of State Totals for all Measures

	2002	2008	2009	2010
Measure 1 (State-wide impacts)	$79,914,285	$105,115,666	$109,421,314	$112,955,169
Measure 2 (Non-tax local funds)	$4,730,215	$1,454,124	$9,140,763	$8,541,224
Measure 3A (Books use)	$64,415,630	$193,041,745	$211,935,652	$210,893,207
Measure 3B (Non-print materials use)	$24,071,990	$48,608,005	$54,234,485	$62,486,355
Measure 3C (Serials use)	$4,142,000	$6,580,500	$6,264,300	$6,135,300
Measure 4 (Reference service, 15 minutes)	$13,134,909	$16,622,805	$18,360,663	$18,067,516
Measure 5 (In-library use)	$10,351,105	$58,023,923	$64,004,466	$64,629,846
Measure 6 (Programs)	$1,492,229	$8,409,614	$9,143,652	$9,697,244
Measure 7 (Computer use)	(not available in 2002 file)	$17,209,507	$20,736,653	$23,184,206
Total all direct impacts	$221,767,162*	$455,065,889	$503,241,948	$516,590,067
Total all state and local income	$77,541,128	$124,473,085	$119,453,061	$120,526,937

Every $1.00 expended by SC state and local government gives a direct return of:	$2.86	$3.66	$4.21	$4.29

*Actual figure used for 2002; not based on tally of this column.

Part II: Indirect economic impacts of all PL in the state

Measure 8 - the indirect economic impacts of all expenditures (minus 75% of collection development expenditures)

	2002	2008	2009	2010
Sum Total for the state	$125,454,132	$165,016,745	$171,776,002	$177,323,655
Minimum	$172,362	$230,377	$226,374	$222,715
Maximum	$18,283,139	$23,935,887	$26,533,259	$27,938,974
Average for the state	$3,059,857	$3,928,970	$4,089,905	$4,221,992

Calculating formula: total expenditures / .637 = secondary economic impacts can be considered reasonable.

	2002	2008	2009	2010
Every $1.00 expended by SC state and local government gives an indirect return of:	$1.62	$1.33	$1.44	$1.47

Final Calculations for Return on Investment				
	2002	2008	2009	2010
Every $1.00 expended by SC state and local government gives a direct return of:	$2.86	$3.66	$4.21	$4.29
Every $1.00 expended by SC state and local government gives an indirect return of:	$1.62	$1.33	$1.44	$1.47
Total direct and indirect return on investment by SC local and state governments is:	$4.48	$4.99	$5.65	$5.76

Appendix D
Classroom Links and Materials

Resources

The *Valuing Public Libraries* Powerpoint is intended to explain the valuation process and can be used as a training or teaching resource. The Powerpoint is available for download at: http://www.libsci.sc.edu/MetaWeb/metaresults.html

Images for Classroom Activities

Justin Winsor

Source: http://usawebproxy0.appspot.com/V1RJNWRHSlhPWFZqZVRVellWZDBjR0pYVm10aFYwVjFZak5LYmt3elpIQmhNbXQyVW0xc2MxcFVjRUpqU0VKeldsaFNkbUp1VFd4TmFtUm1WakpzZFdNeU9YbFlNSEF4WXpOU2NHSnBOWEZqUjJNOQ%3D%3D

Herbert Putnam

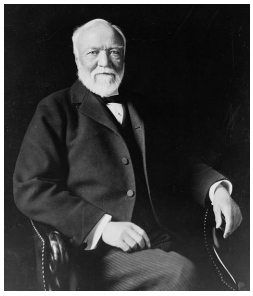
Source: http://commons.wikimedia.org/wiki/File:HerbertPutnam_ALA.png

John Cotton Dana

Source: http://commons.wikimedia.orgki/File:JohnCottonDana_ALA.png

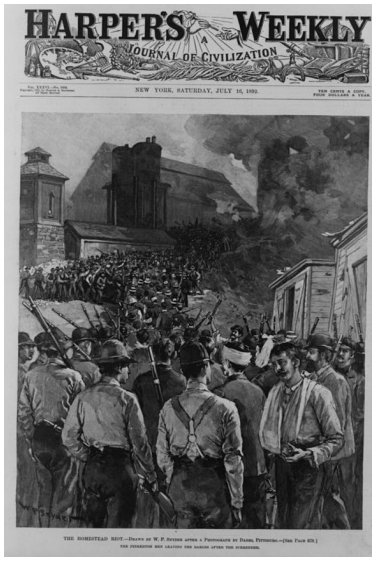
A. E. Bostwick

Source: http://commons.wikimedia.org/wiki/File:1907_ArthurElmoreBostwick_AmericanLibraryAssociation.jpeg



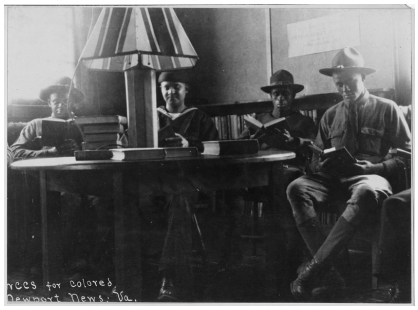
Andrew Carnegie

Source: http://commons.wikimedia.org/wiki/File:Andrew_Carnegie,_three-quarter_length_portrait,_seated,_facing_slightly_left,_1913.jpg



Homestead Steel Strike

Source: http://commons.wikimedia.org/wiki/File:Homestead_riot_harpers_3c26046v.jpg#file



War Camp Community Service. Newport News. Four soldiers seated. American Library Association 1917 c 1919

Source: http://commons.wikimedia.org/wiki/File:War_Camp_Community_Service._Newport_News._Four_soldiers_seated._American_Library_Association._Bo_._._._-_NARA_-_533562.tif

Lutie E. Stearns

Source: http://libraryhistorybuff.blogspot.com/2011_02_01_archive.html

Margery Quigley & Anna Hall

Source: http://www.gfjlibrary.org/?page_id=57

Ernestine Rose

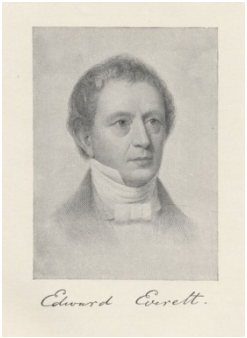
Source: http://southampton.patch.com/events/ernestine-rose-1880-1961harlem-librarian-and-social-activist#photo-8866257

Ellis Island Immigrants

Source: http://www.nps.gov/elis/images/20060927100110.jpg

George Ticknor

Source: http://en.wikipedia.org/wiki/File:George_Ticknor.jpg

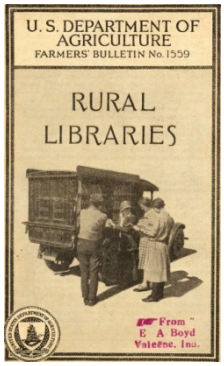


Edward Everett

Source: http://en.wikipedia.org/wiki/File:Edward_Everett_-_Project_Gutenberg_eText_15393.jpg

Carnegie Library

Source: http://en.wikipedia.org/wiki/File:Carnegie_Library,_San_Antonio,_Texas.jpg



Farmers' Bulletin

Source: http://libraryhistorybuff.blogspot.com/2012/09/1928-rural-libraries-bulletin.html

Appendix E
Sample RIMSII Industry Codes

Industry List A. RIMS II 406 Detailed Industry Codes

Detailed industry code and title	Related 2002 NAICS Codes
AGRICULTURE, FORESTRY, FISHING AND HUNTING	
1110 Crop production	
1111C0 Oilseed and grain farming	11111-2, 11113-6, 11119
111200 Vegetable and melon farming	1112
1113B0 Fruit and nut farming	11131-2,111331-4, 111335-6, 111339
111400 Greenhouse, nursery, and floriculture production	1114
111910 Tobacco farming	11191
111920 Cotton farming	11192
1119C0 All other crop farming, including sugarcane and sugar beet farming	11193-4, 111991-2, 111998
1120 Animal production	
1121A0 Cattle ranching and farming	11211, 11213
112120 Dairy cattle and milk production	11212
112A00 Animal production, except cattle and poultry and eggs	1122, 1124-5, 1129
112300 Poultry and egg production	1123
1130 Forestry and logging	
113A00 Forest nurseries, forest products, and timber tracts	1131-2
113300 Logging	1133
1140 Fishing, hunting and trapping	
114100 Fishing	1141
114200 Hunting and trapping	1142
1150 Support activities for agriculture and forestry	
115000 Support activities for agriculture and forestry	115
MINING	
2110 Oil and gas extraction	
211000 Oil and gas extraction	211
2121 Coal mining	
212100 Coal mining	2121
2122 Metal ores mining	
212210 Iron ore mining	21221
2122A0 Gold, silver, and other metal ore mining	21222, 21229
212230 Copper, nickel, lead, and zinc mining	21223
2123 Nonmetallic mineral mining and quarrying	
212310 Stone mining and quarrying	21231
212320 Sand, gravel, clay, and ceramic and refractory minerals mining and quarrying	21232
212390 Other nonmetallic mineral mining and quarrying	21239
2130 Support activities for mining	
213111 Drilling oil and gas wells	213111
213112 Support activities for oil and gas operations	213112
21311A Support activities for other mining	213113-5
UTILITIES	
2211 Electric power generation, transmission, and distribution	
2211A0 Electric power generation, transmission, and distribution	2211*
2212 Natural gas distribution	
221200 Natural gas distribution	2212
2213 Water, sewage and other systems	
221300 Water, sewage and other systems	2213
CONSTRUCTION	
2300 Construction	
230000 Construction	23

Detailed industry code and title	Related 2002 NAICS Codes
MANUFACTURING	
3110 Food manufacturing	
311111 Dog and cat food manufacturing	311111
311119 Other animal food manufacturing	311119
311210 Flour milling and malt manufacturing	31121
311221 Wet corn milling	311221
31122A Soybean and other oilseed processing	311222-3
311225 Fats and oils refining and blending	311225
311230 Breakfast cereal manufacturing	311230
31131A Sugar cane mills and refining	311311-2
311313 Beet sugar manufacturing	311313
311320 Chocolate and confectionery manufacturing from cacao beans	31132
311330 Confectionery manufacturing from purchased chocolate	31133
311340 Nonchocolate confectionery manufacturing	31134
311410 Frozen food manufacturing	31141
311420 Fruit and vegetable canning, pickling, and drying	31142
31151A Fluid milk and butter manufacturing	311511-2
311513 Cheese manufacturing	311513
311514 Dry, condensed, and evaporated dairy product manufacturing	311514
311520 Ice cream and frozen dessert manufacturing	311520
31161A Animal (except poultry) slaughtering, rendering, and processing	311611-3
311615 Poultry processing	311615
311700 Seafood product preparation and packaging	3117
311810 Bread and bakery product manufacturing	31181
311820 Cookie, cracker, and pasta manufacturing	31182
311830 Tortilla manufacturing	31183
311910 Snack food manufacturing	31191
311920 Coffee and tea manufacturing	31192
311930 Flavoring syrup and concentrate manufacturing	31193
311940 Seasoning and dressing manufacturing	31194
311990 All other food manufacturing	31199
3121 Beverage manufacturing	
312110 Soft drink and ice manufacturing	31211
312120 Breweries	31212
312130 Wineries	31213
312140 Distilleries	31214
3122 Tobacco manufacturing	
3122A0 Tobacco product manufacturing	3122
3130 Textile mills	
313100 Fiber, yarn, and thread mills	3131
313210 Broadwoven fabric mills	31321
313220 Narrow fabric mills and schiffli machine embroidery	31322
313230 Nonwoven fabric mills	31323
313240 Knit fabric mills	31324
313310 Textile and fabric finishing mills	31331
313320 Fabric coating mills	31332
3140 Textile product mills	
314110 Carpet and rug mills	31411
314120 Curtain and linen mills	31412
314910 Textile bag and canvas mills	31491
314990 All other textile product mills	31499
3150 Apparel manufacturing	
315100 Apparel knitting mills	31511, 31519
315210 Cut and sew apparel contractors	31521
315220 Men's and boys' cut and sew apparel manufacturing	31522
315230 Women's and girls' cut and sew apparel manufacturing	31523
315290 Other cut and sew apparel manufacturing	31529
315900 Apparel accessories and other apparel manufacturing	3159