

**MEASURES OF VALUES OF ECONOMIC BENEFITS
OF PUBLIC LIBRARIES: AN OVERVIEW**



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Short Profile

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ABSTRACT:

Public libraries confer both direct and indirect social as well as economic benefits to the individuals of the localities in which they are located. Public libraries serve a lot of direct benefit to the individuals via the services provided by library collections, circulation and reference transactions, programming, and electronic resources, etc. Public libraries principal contribution to community culture is through their lending, reference and local history

collections. The use of public libraries helps to convert an illiterate individual to a literate one, which is an indirect benefit. The public libraries are also a major employer in their own right. Most public library employees, mainly in the LDCs like our country India, live within or close to their respective localities. They tend to spend their salaries to the surrounding localities. These salaries are injected into the surrounding local economy which indirectly creates a multiplier process in the local economy. It is also another indirect economic effect. While it is difficult to measure the value of indirect benefits, values of direct economic benefits to library users are measurable. While there is a general recognition of the vital contribution public libraries make towards the social capital formation, educational enhancement and cultural upliftment of local individuals, there is an urgent need for public libraries to clarify their contribution in terms of economic value. Assessing the public library's contribution to the country is a complex matter, requiring consideration of a number of different dimensions. First, the value added by the public library takes many forms – economic, cultural, social and intellectual. This paper tries to make an overview for measuring the value added by the public library in economic perspective only,

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used in current researches of this field.

KEYWORDS

Public Library, Direct Economic Benefit, Indirect Economic Benefit, Economic Value, Multiplier Process, Local Economy.

INTRODUCTION

“Books constitute capital. A library book lasts as long as a house, for hundreds of years. It is not, then, an article of mere consumption but fairly of capital, and often in the case of professional men, setting out in life, it is their only capital.” - Thomas Jefferson.

Current world is a knowledge-based world in which dissemination of knowledge to the public is an essential determinant for economic as well as social development of any economy. The public library provides an extra-ordinary role for knowledge dissemination to the public. Public libraries provide significant economic benefits for their communities. Public library provides a genuine public space and a safe and welcoming atmosphere, thus creating the potential for individuals and the general community to mould the library environment in accordance with the history, values and characteristics of the local area. Public library programs and services were seen as complementing collections and enabling library services to specifically target and contribute to social wellbeing within niche groups. Library staff plays an active role in local cultural coordinating committees. Public libraries perform a lot of jobs in the community whose economic value is infinite. It is perhaps natural when considering economic measures to think in terms of economic value. When public libraries report and promote their economic impact, they can gain currency as key players in economic development of any community. A key challenge for public libraries is to identify and quantify their economic benefits to library users. In addition, public libraries must identify and take partial credit for those social outcomes for which market prices or quasi-market cannot be determined (Indiana State Library, 2007, p:7) . Resultantly, assessing the perceptions of the economic value of public libraries among individual community members is a very difficult task.

LITERATURE REVIEW

Measuring the value of a library service is a tough job as benefits of library service are mostly qualitative (Ellis, 1994). Traditionally, attempts to assess the benefits provided by library have taken the form of qualitative case studies, but failing to provide a comprehensive evaluation. But now a technique supported by Arrow, et al (1993), permits a coherent quantitative evaluation, the contingent valuation technique, of the total benefit to the nation of publicly funded institutions and programs. Fitch and Warner (1998) show that public libraries assist local communities in supporting and encouraging the democratic nature of a society. Public libraries also generate benefits beyond those received directly by their patrons. Hence, determining the value of the benefits resulting from the operations of public libraries is a tough task. Placing a value on as many direct services and benefits as possible is fundamental to the goal of assessing the economic benefits that taxpayers receive for the dollars they spend on libraries. This approach is called benefit-cost analysis. Holt and Elliott (2003) used benefit-cost analysis to assist in their valuation of public library services, noting that benefit-cost

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analysis is a good tool for measuring both direct and indirect benefits. Some researchers suggest that market value should be estimated by determining the dollar amount patrons are willing to pay for a library's programs and services. One of the traditional services provided by libraries is a reference desk at which patrons can ask librarians specific questions, in hopes of obtaining reliable answers in a relatively short period of time. Unlike some other library services, there is no market equivalent for libraries' reference services. Without a reasonable market-based option, the most straightforward method to value a library's reference service is by determining the amount of time librarians spend on the reference questions and then factoring in compensation for librarians. Spencer and Luene (1998) provide some steps for valuation of reference services. The first step is to characterize reference questions. One major study found that 70.9% of reference questions take between 1-5 minutes to answer, 19.1% take between 6-10 minutes to answer, 7.9% of reference questions take more than 11 minutes to answer, and 2.1% of reference questions take an unknown time to answer. Griffiths et al. (2004) shows that nearly a third of the households surveyed would be willing to pay less than \$10 for a library card, rather than pay taxes. More than a third of in-library patrons surveyed would be willing to pay \$10 for a library card rather than pay taxes. To avoid the expense and subjective nature of measuring indirect benefits, other studies have proposed broader conceptual frameworks related to studying economic benefits. Sawyer (1996) identified and categorized a wide variety of possible impacts public libraries have on their communities. Liu (2004) examined the causal relationship between public libraries, literacy levels, and economic productivity measured by gross domestic product per capita using path analysis. Sendak (2013) examined the economic impact of the Toronto Public Library through a number of lenses, building on methodologies of other studies and introducing new measures to value library space. The rigorous methodology quantified the total economic impact and Return on Investment of Toronto Public Library services, based on analysis of direct tangible benefits, direct spending, and indirect tangible benefits. Return on Investment (ROI) is calculated by taking the total economic benefits – the sum of direct tangible benefits and indirect tangible benefits – to the city of Toronto and dividing them by the cost to provide the service (direct spending).

ECONOMIC CONCEPTS OTHER THAN VALUE

In addition to value, we have to concentrate on three most inter-related economic concepts:

Economic Value: The economic value of public libraries expresses, as a financial amount, the importance of library services to individuals within the community. It is an imputed amount and involves no exchange of goods and services, thus no economic activity is generated.

Economic Benefit: The economic benefit derived from public libraries is the financial amount saved relative to the cost of obtaining services from alternate sources. This is also an imputed amount and involves no direct exchange of goods and services; hence no direct economic activity is generated. It does, however, free financial resources to be used for other purposes, which may translate to either a positive or negative impact on economic activity.

Economic Activity: The economic activity generated by public libraries involves real financial activity in the form of the various exchanges of goods and services and associated multiplier effects necessary to

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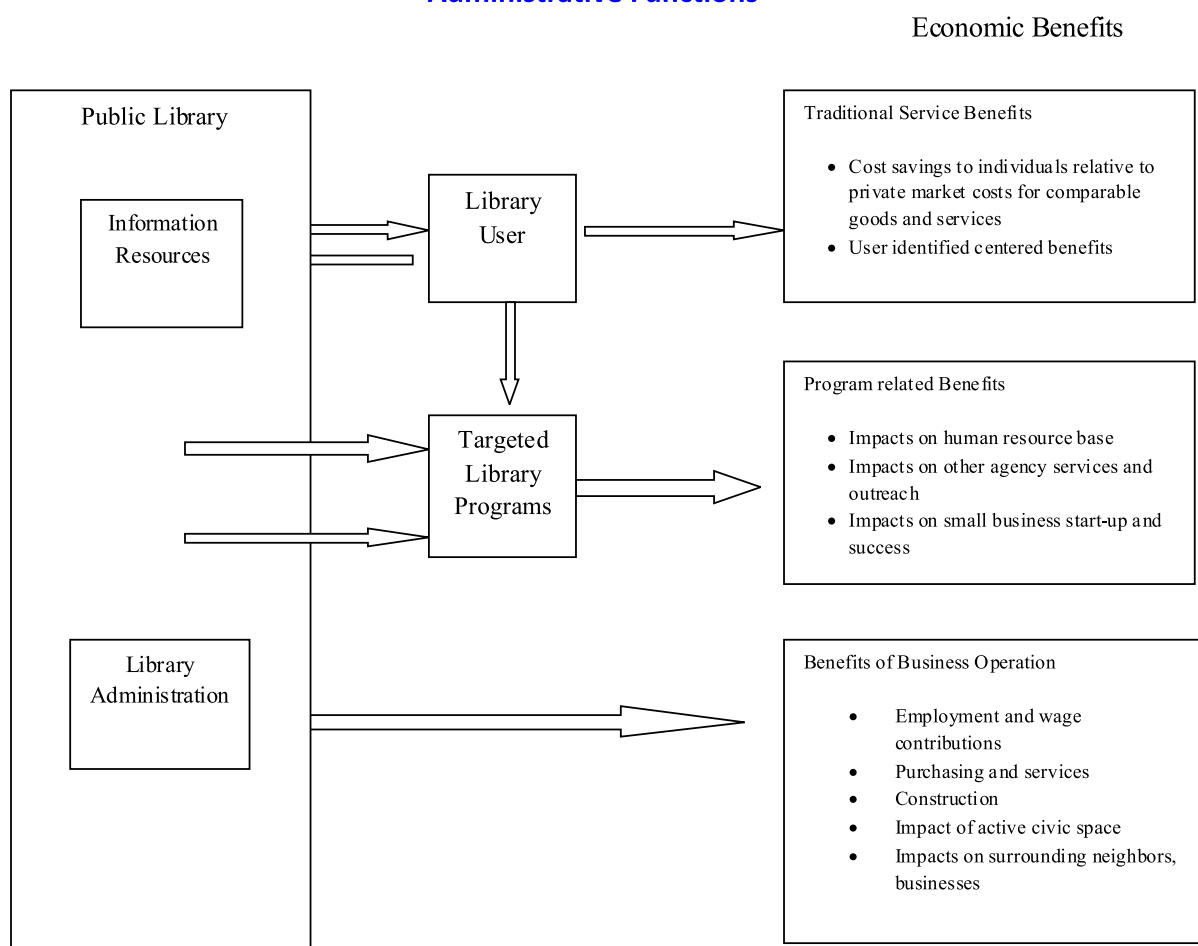
provide public library services (Liddle, 2008 , p: vii).

Public Library Benefits

Public libraries make a variety of materials available for patrons to borrow. They also provide periodical subscriptions and reference materials for use within the library. As computer technology has advanced, libraries have made computers available for use in the library, and they provide computer training for patrons as well. Technological changes also have caused libraries to expand reference materials to include electronic databases accessible both from within the library and from remote locations for library cardholders.

In the literature, several approaches have been taken to capture concepts of benefits from public libraries, which are not directly user related. Figure 1 provides a model that summarizes the multiple ways in which public library resources, programs and services impact local economic development conditions.

Figure 1: Model Distinguishing Economic Benefits Derived from Library Service and Administrative Functions



Source: Gomez (2007): Urban Libraries Council, U S A

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A direct benefit represents the value of the item, information, or entertainment provided by the library service itself. For example, a person who accesses a book about writing a resume receives the economic value of that information measured approximately by the value of the book. Fraser et al. (2002) define direct benefits as the value of the services realized by the users of public libraries. Indirect benefits are those generated from the existence of the library for nonusers or the community at large. The benefits are far more complex to define and measure. Firstly, as many public library services have no market price to gauge their economic values, the benefit to the community for those services must be a proxy of a market price. Secondly, there may be many social, cultural and economic benefits to public libraries well which are difficult to value in monetary terms. Direct economic effects are assessed in terms of the library's local spending on staff compensation and on goods and services. Library spending helps support the network of local economic transactions. Putnam (2000) describes the relationships among people that serve as social glue. Many studies attest to the social and community benefits of public libraries. Public libraries provide direct service benefits to the individuals. These include cost savings of public access resources over market costs of goods and services, as well as the self identified benefits of getting information or access to technology (Urban Libraries Council, 2007).

Indirect benefits refer to the benefits that third parties or the community as a whole derive when individuals use library services (Holt et al. 1999). In other words, "indirect" benefit represents the value derived from the use of the item, information, or entertainment provided by the library service. To continue the previous example, a person who uses the information in a book about writing a resume to obtain a good job obtains an indirect benefit from the library material. The indirect benefit of the library service in this instance is the successful pursuit of an employment opportunity. The indirect effects represent the purchases of goods and services that public libraries make in the regional economy and thus, the output and employment that the local firms producing those goods and services contribute to the regional economy. The induced effects represent the spending on goods and services by the individuals of both the library staff and of the additional employees of companies that provide goods and services to the public library that result from the library's business with those local firms.

Economic approaches to valuing public libraries

Economists, generally, know the price of everything and the value of nothing. Libraries provide valuable services to the community, most of which are free and, hence, have no observable market price. Economists have developed several techniques to calculate proxy price for goods and services that do not have observable market prices. These valuation methods have been used in several researches of library operations. Despite the fact that price and value are conceptually different, price is a convenient and often reliable anchor-point to determine the value of market traded goods and services. For public goods where price is not determined by the interaction of demand and supply forces, there is no equivalent anchor-point and other means must be employed to assess value.

The total value of the good or service however, is given by the sum of all categories of value, and not simply those that are easy to measure. The Total Economic Value is generally decomposed into three categories of value: (1) direct use value; (2) indirect use value; and (3) nonuse value. The former two categories are sometimes collectively referred to as "use value". The Direct use value is derived from goods, which can be extracted, consumed or directly enjoyed. It is also therefore known as

extractive or consumptive use value. In the context of a river, for example, direct use value is derived from the harvesting of fish. Indirect use value is referred to as non-extractive use value, derived from the services that an environmental resource provides. A wetland, for example, acts as a water filter, often improving water quality for downstream users. This service is valued by downstream users, but does not require any good to be extracted / consumed. Non-use values are defined as those benefits or welfare gains/losses to individuals that arise from environmental changes independently of any direct or indirect use of the environment. This category can be further subdivided into (1) option value and (2) existence value.

Public libraries have direct user value (actual user value) as well as non-user value. Non-users of public libraries also gain benefits from public library services. Library non-users enjoy the economic benefit, called legacy, which is the value of preservation of library services for future generations. These include the value non-users place on having the option to use public libraries for the benefits of future generations (bequest value), as well as the value of knowing that public libraries exist for others to use, both now and in future (vicarious value). The sum of bequest value and vicarious value is option value. Other than these two, public library benefits have another value, named existence value arising from the existence benefits of public library services. It is included in non-use benefits. Existence value of public library is the perceived community value and significance of library services.

Hence Total Economic Value = Actual User value + Option value+ Existence Value.

For actual user value, market-based valuation is possible. If certain objective standards are set, then the cost of non-compliance with those standards is assessed in terms of market-based estimation of opportunity costs. In case of subjective preference based estimation, revealed preference for services of public libraries in the market forms the basis of valuation. Since the source of option value is ignorance, it cannot be completely captured in a market frame. It should be considered as the non-user value. For the evaluation of non-user benefits no market-based proxy can be found. Hence we have to go by stated preference method where either hypothetical or experimental markets will be constructed.

The mostly used benefit measurement approaches can be summarized in figure 2.

Figure 2: Benefit Measurement Framework

Benefit categorization		Benefit description	Measurement technique/ coverage		
Use benefits	Direct use benefits	...access to library resources/ services ...social interaction	Travel costs	Financial savings	Contingent valuation - users
	Indirect use benefits	...sense of place and local amenity ...environmental savings ...contribution to literacy ...contribution to education, career & health			
Non-Use benefits	Option, legacy and existence benefits	...for future use ...for current and future generations			Contingent valuation - non-users

Source: SGS Economics & Planning (2013): Australian Library and Information Association.

Standard economic theory assumes that people have well-defined preferences among alternative bundles of goods, comprising both market and non-market goods. It also assumes that people know their preferences, and that these preferences have the property of substitutability among the market and non-market goods making up the bundles. The value measures based on substitutability can be expressed either in terms of WTP or WTA (Freeman, 1993).

Willingness to Accept (WTA): The amount an individual is willing to accept as compensation to leave access to services provided to him/her. The minimum WTA is an amount of money considered as compensation for foregoing a benefit or for incurring a loss and this reflects the value of such a benefit or loss.

Willingness to Pay (WTP): The amount an individual is willing to pay in order to retain or gain access to a hypothetical object. The maximum WTP can be considered an expression of the individual's values.

Financial savings Approach

This method values the services offered by public libraries by asking users to estimate the costs they would incur if similar services were provided by substitute, private sector providers.

Cost-Benefit Approach

If public libraries have positive and social value, then the gains or benefits from libraries outweigh their costs. Decision-makers generally have objectives besides economic efficiency and net economic value. However, benefit and cost estimates provide important information for decision-makers to be considered in their process of deciding on public library activity level. One important feature of CBA is that all relevant effects are expressed in monetary values, so that they can then be aggregated. The general principle of monetary valuation in CBA is to value impacts in terms of their marginal social cost or marginal social benefit. Once all relevant cost and benefit flows that can be expressed in monetary amounts have been so expressed, it is necessary to convert them all into present value (PV) terms. The present value of a cost or benefit (X) received in time t is calculated as follows:

$$PV(X_t) = X_t [(1+i)^{-t}] \quad \text{----- (1)}$$

The expression in square brackets in equation (1) is known as a discount factor.

The main purpose of CBA is to help select projects and policies which are efficient in terms of their use of resources. The main criterion applied is the net present value (NPV) test. This simply asks whether the sum of discounted gains as $(\sum B_t (1+i)^{-t})$ exceeds the sum of discounted losses $(\sum C_t (1+i)^{-t})$. If so, the project can be said to represent an efficient shift in resource allocation, given the data used in the CBA.

The NPV of a project is thus:

$$NPV = \sum B_t (1+i)^{-t} - \sum C_t (1+i)^{-t} \quad \text{----- (2)}$$

Where the summation (\sum) runs from $t=0$ (the first year of the project) to $t=T$ (the last year of the project). The criterion for project acceptance is: accept the project if and only if $NPV > 0$.

TRAVEL-COST METHOD

Two indirect and explicit methods based on revealed preferences are of particular interest for valuation of public library services. The first is based on household production function methods and involves investigating changes in the consumption of market commodities that are substitutes or complements for the non-market good to be valued (Braden and Kolstad, 1991). The travel cost method is commonly used. Individuals' costs of travelling to the public library, the cost of the time they use in the library, and the frequencies of library visits can be used to derive a measure of their willingness to pay for the library. Some researchers have used time allocation theory where the cost of library use is equated by the opportunity cost of the user's time, i.e., the other uses to which that time could be put, usually measured by the wage rate (Meier, 1961; Getz, 1980; Van House, 1983). The travel cost method is often used to value national parks because the cost of travel, in addition to the time required for travel and any user fees would represent the best estimate of a person or family's value of enjoying the amenities of the national park. It may also be used to evaluate the location decision of a public service to which many people visit.

The travel cost method is based on the assumption that the cost that people incur to visit a public library is the payment or the "price" of access to services. It may be measured in the money value of time as well as the cost of journey. Peoples' willingness to pay to visit the library may be estimated based on the number of trips that they make at different travel costs. The travel cost method is often used to estimate economic use values of library services along with the depreciation cost. The travel cost method is uncontroversial, inexpensive and reliable, but it has its own limitations. Especially, it is difficult to assign pecuniary value to time cost of the visits to a library.

CONTINGENT VALUATION METHOD

Over some forty plus years, CVM has emerged as a popular and recognized approach to valuing non-market goods. CVM has most typically been applied to environmental matters such as the preservation of grazing traditions in the Australian Alps and replacing a road with a tunnel at Stonehenge. It is estimated that greater than 5,000 studies have been undertaken, including a relatively small but growing number of studies involving cultural organizations and services (Noonan, 2003). Non-use benefits are mostly measured using CVM techniques, i.e. undertaking non-user surveys where such survey collection methods may prove too expensive and/or time-consuming. Contingent valuation methodology (CVM) was adopted to estimate economic value based on responses to the following question: "Thinking from the broader community perspective, if the public library was not funded by government, how much would you be willing to pay to maintain the community's access to the current services?" Provision was made to nominate a specific amount or to select from a range of

nominated values (SGS Economics and Planning, 2011). Arrow, et al (1993) set out to measure the value to the United States of legislation limiting discharge of oil. Evaluating the consequence to those who benefited directly was relatively straightforward. But for at least the last twenty-five years, economists have recognized the possibility that individuals who make no active use of a particular beach, river, bay, or other such natural resource might, nevertheless, derive satisfaction from its mere existence, even if they never intend to make active use of it. In any correct assessment of the value of a given program, these indirect benefits must be included. They concluded that Contingent Valuation Method was the best approach for measuring both the direct and indirect benefits in such a case.

The name 'contingent' valuation is based on the characteristic feature of this method as it works on asking people to state their willingness to pay, contingent on a specific hypothetical scenario and description of the environmental goods and serviced. It is based on an assumption that people would do what they say. Indeed this assumption makes the foundation of this method rather shaky because the congruence in thinking, saying and doing is not necessary. It is not unusual to experience that in saying people are guided by the 'ideals', but in doing they quite forget the ideals. It is easy said than done, go the proverb. However, if there is some significant association between saying and doing, this method may be very successful in eliciting the willingness of the people to pay for the environmental goods and services and thus, their value. Therefore, granted that its assumption is correct, the contingent valuation method is a very versatile method which can be applied to valuation of almost any kind of environmental goods and services irrespective of their being marketed or not marketed. It can be used to estimate use value, non-use value, option value or bequest value.

The contingent valuation has three disadvantages. First, it requires detailed surveys of library patrons. Such surveys are expensive both in terms of time and money. Second, the valuation based on such surveys inherently rests more on subjective notions of value rather than market values. Third, the surveys present patrons with purely hypothetical alternatives, and, as a result, they yield inherently speculative information

CONSUMER SURPLUS APPROACH

Another method is the consumer surplus approach. The economic theory of consumer surplus holds that, in a market economy, most consumers are willing to pay more than the market price. The difference between what consumers, willingness to pay and actual pay is called consumer surplus. The goal of the approach for valuing free library services is to ascertain the additional consumer surplus that results from providing priced goods for free. The consumer surplus approach attempts to link the services that libraries provide with substitutes in the marketplace. To the greatest degree possible, a substitute is found and a market price is assessed for each library service delivered to a community member. The main drawback of the consumer surplus method is what it may leave out of the total valuation equation.

CONCLUSION

Measuring the benefits of public libraries is not as straightforward as measuring costs, because the benefits are enjoyed by both users and non-users, and are not traded in the market place as they are largely provided free of charge. Consequently, market prices do not exist. Public libraries have direct

user value as well as non-user value. For user value, actual market-based valuation is used which has been broadly classified under two headings: the objective standard based valuation and the subjective preference based valuation. Amongst them subjective preference based valuation, that is, Revealed Preference based valuation is widely used. TCM is mostly used Revealed Preference based valuation. For valuation of non-user benefits no market-based proxy can be found. Hence we have to go by stated preference method where either hypothetical or experimental markets will be constructed. Non-use benefits are mostly measured using CVM techniques, i.e. undertaking non-user surveys where such survey collection methods may prove too expensive and/or time-consuming. For the individuals who make no active use of a particular service, CVM can also be used for measuring use benefit. Financial Savings and Consumer Surplus Approach are also used for valuation of economic benefits of public libraries.

CITED REFERENCES

1. Arrow, Solow, Leamer, Radner and Schuman (1993): Report of the NOAA Panel on Contingent Valuation, Federal Register, 58, Washington DC.
2. Braden, J.B. and Kolstad, C.D. (Eds.) (1991). Measuring the demand for environmental quality. Amsterdam: North-Holland.
3. Ellis, K. B (1994): "The Challenge of Measuring the Economic Impact of Public Library Services", North Carolina Libraries, 52 (2), 52–55.
4. Fitch, L and J. Warner (1998): "Dividends: The Value of Public Libraries in Canada", The Bottom Line: Managing Library Finances, 11 (4).
5. Fraser, B.T., T. W. Nelson and C.R. McClure (2002): "Describing the Economic Impacts and Benefits of Florida Public Libraries: Findings and Methodological Applications for Future Work", Library & Information Science Research, 24, 211-233.
6. Freeman, A.M (1993): The Measurement of Environmental and Resource values: Theory and methods. Washington: Resources for the Future.
7. Getz, M (1980): Public Libraries: An Economic View, Baltimore: John Hopkins University Press.
8. Gomez, M (2007): Making Cities Stronger: Public Library Contribution to Local Economic Development, Urban Libraries Council, USA.
9. Griffiths, J.M., D. King, J. Harrington, T. Lynch, and C. Tomer (2004): State of Florida Taxpayer Return on Investment in Public Libraries. The State Library and Archives of Florida, Available from <http://dlis.dos.state.fl.us/bld/roi/publications.cfm>.
10. Holt, G. E and D. Elliott (2003): "Measuring Outcomes: Applying Cost-Benefit Analysis to Middle-Sized and Smaller Public Libraries", Library Trends, 51 (3), 430, USA.
11. Holt, Glen E., E. Donald and M. Amonia (1999): "Placing a Value of Public Library Services", Public Libraries, 38, 98–108.
12. Indiana State Library (2007): The Economic Impact of Libraries in Indiana, Indiana Business Research Center. Kelly School of Business, Indiana University, Bloomington, Indiana.
13. Liddle, J (2008): Enriching Communities: The Value of Public Libraries in New South Wales, Library Council of New South Wales, NSW Public Library Network Research Committee, New South Wales.
14. Liu, L. G (2004): "The Contribution of Public Libraries to Countries' Economic Productivity: A Path Analysis", Library Review, 53(9), 435–441.

- 15.Meier, R.L (1961): "Efficiency Criteria for the Operation of Large Libraries", Library Quarterly, 31, 215-234.
- 16.Noonan, D. S (2003): "Contingent Valuation and Cultural resources: A Meta-Analytic Review of the Literature", Journal of Cultural Economics, 27, 161, USA.
- 17.Putnam, R. D (2000): Bowling Alone: The Collapse and Revival of American Community. New York: Simon & Schuster.
- 18.Sawyer, R (1996): "The Economic and Job Creation Benefits of Ontario Public Libraries", The Bottom Line: Managing Library Finances, 9 (4), 14–26.
- 19.Sendak, M (2013): So Much More: The Economic Impact of the Toronto Public Library on the City of Toronto, The Martin Prosperity Institute (MPI), Toronto Public Library.
- 20.SGS Economics & Planning (2011): Dollars, Sense and Public Libraries, Technical Report, State Library of Victoria.
- 21.SGS Economics & Planning (2013): National Welfare & Economic Contributions of Public Libraries, Final Report, Australian Library and Information Association.
- 22.Spencer, J. S and D. Luene (1998): "Assessing Time Spent on Reference Questions at an Urban University Library", The Journal of Academic Librarianship, 24 (4), 290-294.
- 23.Urban Libraries Council (2007), Making Cities Stronger: Public Library Contributions to Local Economic Development, The Urban Institute, Washington, DC.
- 24.Van House, N (1983): "A Time Allocation Theory of Public Library Use", Library and Information Science Research, 5 (4), 365-384.

WEBSITES

- 1.www.sgsep.com.au
- 2.www.google.com