FROM EFFICIENCY TO EFFECTIVENESS: CHALLENGES IN ASSESSING THE SOCIOECONOMIC IMPACT OF PUBLIC LIBRARIES IN SINGAPORE

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ABSTRACT

The National Library Board of Singapore has set itself a formidable challenge: To measure the socioeconomic outcome and impact of public libraries in Singapore. Triggered by a desire for more informed decision-making as well as a need for superior accountability to secure limited public funds, many libraries around the world have undertaken efforts to quantify the benefits they provide to individual users and society as a whole. This article addresses the general challenges associated with measuring the impact of public libraries and the specific challenges faced in the context of Singapore. The article suggests that only an approach that employs different research strategies (i.e., qualitative, quantitative non-monetary and quantitative monetary) can provide a sufficiently nuanced and multifaceted assessment. Furthermore, it is argued that the results of an assessment study will be more meaningful and useful if it is addressing a specific policy issue within a comparative perspective, instead of trying to arrive at a single aggregate value of the monetary benefits generated by public libraries.

INTRODUCTION

Public libraries in Singapore have undergone a tremendous change over the past 10 years. Like in many other countries libraries reinvented themselves as they strove to remain relevant to citizens and to secure continued public funding. The IT revolution was judiciously embraced and left its profound mark on local libraries by increasing the variety of services provided and changing the way these services were delivered to users. In addition, public libraries have become life-style institutions with a hip-factor, often centrally located like for example in shopping malls, providing very attractive environments where people go and meet.

In fact, there is a discernible convergence between libraries and community centers in Singapore as evidenced by the reopening of the Jurong West Community Library in March 2006, which is now fully integrated into the

Frontier Community Club. And so successful in attracting patrons have public libraries been that in recent times interest conflicts have become more pronounced between different user groups (i.e., the more traditional users who consider libraries as quiet places for reading and studying and other patrons who use libraries as a place for meeting people and having fun). Libraries have been addressing these conflicts with public awareness campaigns and by changing the physical layout of libraries, providing different spaces that cater to different needs.

The successful transformation of public libraries in Singapore was spearheaded by the National Library Board (NLB), which was officially established in 1995. The strategies and policies implemented by the NLB were summarized in two reports: (a) "Library 2000", released in March 1994, and (b) "Library 2010: Libraries for Life, Knowledge for Success", released in July 2005. This article is focusing on the objectives and challenges identified in the latter report, in particular the issue of impact measuring.

Such focus seems warranted, for while there is anecdotal and quantitative evidence of the popularity of public libraries in Singapore, there has been no systematic and continued effort to measure the socioeconomic impact public libraries have on their patrons. As for popularity, in a letter to the Forum section of the Straits Times (29 April 2006), for instance, a reader shared her satisfaction with the Singaporean Government's achievements by highlighting the following:

"For those who enjoy reading (my children and I are among those who benefited greatly from the mass upgrading of libraries islandwide, including the posh library in Takashimaya), have you ever wondered how much has been spent just to encourage more people to read?"

The article proceeds as follows. First, a brief overview of the Singaporean public library system is given. This is followed by a summary of the highlights of the Library 2010 report. Next, a general framework for assessing the outcomes and impact of public libraries is presented. Finally, a closer look is taken at the specific challenges faced when addressing the outcome measurement goals laid out in the Library 2010 report.

OVERVIEW OF SINGAPORE'S PUBLIC LIBRARY SYSTEM

As of May 16, 2006, The NLB is overseeing a public library system that consists of the following four layers (see "fast facts" at www.nlb.sg):

- The flagship National Library, which reopened in July 2005 and which houses the Lee Kong Chian Reference Library, the Central Lending Library as well as the NLB headquarters.
- 3 centrally located regional libraries which have larger collections and provide a broader range of services than regular community libraries.
- 19 community libraries, of which 10 are located in shopping malls or town councils.
- 16 community children's libraries, which have limited opening hours.

In the financial year 2004/5 the NLB group (inclusive of two subsidiary companies) had a workforce of 846 full-timers and 548 part-timers (NLB 2005a). In the same year the group's operating income was SGD22 million and operating expenditures amounted to SGD164 million. The ensuing deficit of 142 million was covered by utilized government grants of SGD151 million (i.e., 102 million operating grants, 24 development grants and 25 deferred capital grants amortized).

Public libraries' total membership was 1.84 million in 2004/5 as compared to 1.1 million in 1995 (NLB 2005a). Membership peaked in 2002/3 with 2.1 million but this number was hugely inflated due to outdated membership records. In 2004/5 there were 29.8 million visitors up from 12.8 million in 1997 (numbers peaked in 2002/3 with 31.8 million). Cumulative loans were at 26.3 million in 2004/5 as compared to 14.3 in 1995/6 and again peaked in 2002/3 with 28.7 million. The observed decrease in numbers after the peak year 2002/3 can most likely be attributed to library closures due to upgrading work.

A particular challenge for public libraries in Singapore is providing the different ethnic communities with library materials in their respective mother tongues, i.e., Chinese, Malay and Tamil in addition to English. Most of the 979,796 book titles held by public libraries in 2004/5 were in English (i.e., 71%), 19% were in Chinese, 7% in Malay and 3% in Tamil (NLB 2005a). If we look at the number of book items (i.e., 7.3 million) instead of titles, the dominance of English (63%) is somewhat reduced in favor of Chinese (25%).

LIBRARY 2010 IN A NUTSHELL

Based on the growing efficiency and quality of the services provided by public libraries in Singapore, the NLB can be considered to be a hugely successful turn-around story, which has attracted much interest to the point of it becoming the subject of a Harvard Business School case study (Hallowell et al. 2001).

After the success of its Library 2000 plan, the NLB has not been resting on its laurels. Rather, it has embarked on a new strategy with a masterplan that reflects a progression from concerns with mere efficiency to more fundamental and at the same time intricate issues of effectiveness (NLB 2005b). The shift in strategic focus is depicted in Figure 1. While it might have been desirable to directly move Singaporean public libraries from the lower-left to the upper-right quadrant (dotted arrow), a stepwise approach seems more feasible. Likewise it was probably more practical to first improve efficiency and then effectiveness. The shift in orientation between the two strategic plans is an indication that efficiency and the application of technology are indeed not regarded as an end in itself but rather a means to an end.

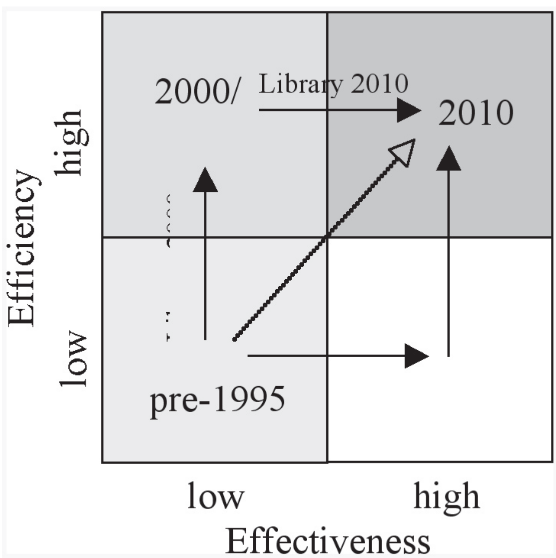

Figure 1: Shift in strategic focus between Library 2000 and Library 2010 plans

The efficiency dimension refers to quantitative input-output relationships in terms of cost and time saved; it essentially means doing things right. For instance, by using technologies like radio frequency identification tagging, the convenience and speed of borrowing library materials were significantly increased. Training library staff also improved efficiency and prepared the ground for the second step towards increased effectiveness. The effectiveness dimension refers to cause-effect relationships; it means doing the right things in order to make a qualitative difference in people's lives in accordance with the NLB's mission statement, namely "to expand the learning capacity of the nation so as to enhance national competitiveness and to promote a gracious society" (NLB 2005a). But while there are more or less established metrics for measuring improvements in efficiency, the measurement of effectiveness is a much less straightforward issue as will become clear in the next two sections.

For the purposes of this article, the highlights of the Library 2010 report can then be summarized as follows. After identifying major challenges and needs arising from accelerated socioeconomic change in the wake of Singapore's becoming a knowledge-based economy, the NLB formulates a set of desirable outcomes and a number of strategies for achieving these outcomes. In particular, it aspires to assume a leading role in growing Singapore's stock of knowledge capital by following a three-pronged approach: (a) making information accessible, (b) building new knowledge and expertise, and (c) enabling knowledge sharing and exchange. In order to unleash the full potential of this growing knowledge capital and for the expected knowledge dividends to materialize, a number of specific objectives have been formulated. Among others these are:

- Grow knowledge capital ("knowledge for success")
  - by fostering individualand collective upgrading and lifelong learning
  - by becoming the first stop for Asian content

- Foster social capital and cohesion ("libraries for life")
  - by providing a physical and virtual space for social interaction and collaboration
  - by ensuring an equitable access to public library services for all Singaporeans

The concrete strategies devised for achieving the above outcomes are:

- Build a network of knowledge assets
- Leverage on technology to support collaboration
- Focus on needs of different customer communities
- Expand professional competencies of library staff
- Measure outcomes and impact

The remainder of this article will be focusing on the challenges that are involved in measuring the impact of public libraries in general and Singaporean public libraries in particular given the ambitious goals identified in the Library 2010 report.

A GENERAL ASSESSMENT FRAMEWORK

Measuring the output and impact of public libraries serves two main purposes, namely:

- Demonstrate accountability
- Inform decision making

Public libraries are accountable to their main financial stake¬holders, i.e., taxpayers and political decision makers. With public funding becoming increasingly scarce, the efficient and effective use of these resources is essential. In order to enhance decision-making in effectively deploying available library resources, library management also needs up-to-date and accurate information regarding the utility of its services and the needs of its customers.

In recent years, awareness has grown both among library professionals and funding authorities that traditional output measures tell an incomplete story. The number of members, visitors and loans, the kilometers of shelf space occupied by books and videotapes, the number of enquiries and website logons etc. are all certainly useful and often impressive indicators of how efficiently a library spent its operating and development budgets. But what really matters are the outcomes and returns, both tangible and intangible, that public library services produce for individuals and society as a whole. Thus, libraries are increasingly asked to provide concrete evidence of their socioeconomic impact and the outcomes they contribute to society and the economy. Often, and not surprisingly, this evidence has to be expressed in "hard", that is, preferably monetary terms.

Unlike improvements in efficiency, however, impact and outcomes are much more difficult to measure quantitatively, let alone in monetary terms. Many of the contributions by public libraries are indirect and intangible, or at least do not have a clear market value attached to them. In fact, some dimensions are by their very nature beyond quantitative and monetary measurement. This has to be recognized and dealt with adequately by applying different methods of data collection and analysis (i.e., qualitative and quantitative, monetary and non-monetary), depending on the context of the research question.

Figure 2 presents an integrated framework of assessment strategies that provide decision makers with a multifaceted picture of the performance of public libraries. Rather than an issue of either-or, it is argued here that a "triangulation" approach is more useful and that the chosen methodological focus (e.g., qualitative or quantitative) needs to be tied to the specific nature of the underlying research question or policy evaluation. There are three major methods for assessing the performance of public libraries:

- Capacity and transaction analysis
- Service quality and customer satisfaction analysis
- Impact and outcome analysis

As a prerequisite for such analyses there is also a basic need to know what services the library provides and who its major groups of customers are. Without such background information gained from service audits and customer profiling, one cannot proceed meaningfully to any of the other types of analyses.

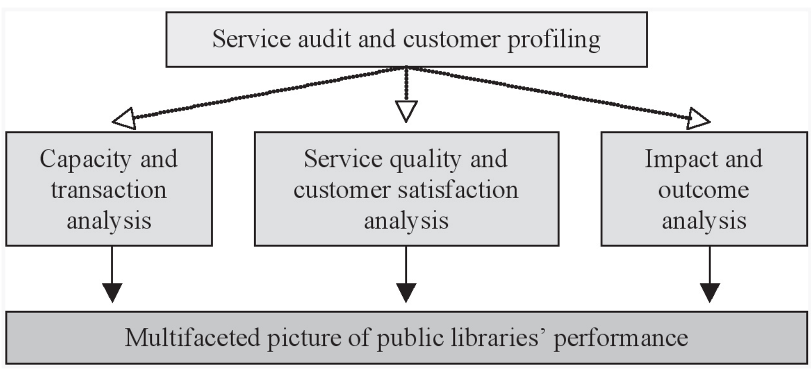

Figure 2: General assessment framework

While the three approaches provide different insights into the performance of public libraries, they share at least one commonality, i.e., the utility of the information gained is significantly increased by applying a deliberately comparative and fine-grained analysis strategy. This means that research undertaken should be specific (i.e., focusing on specific policies or customer groups) and it should focus on differences and change. For instance, in the context of public libraries the most obvious comparative dimensions include:

- Time (in what ways have things changed over time?)
- Branches (are some branches doing better than others?)
- Policies (are some policies more successful in achieving an objective than others?)
- Customer groups (are some social groups underrepresented as library users?)
- Services (are some services more popular than others?)

Furthermore, any performance and impact measurement study should address the following general requirements of rigorous research:

- Validity (are the data indeed pertinent for decision making?)
- Reliability (are the data accurate?)
- Representativeness (are the data generalizable?)
- Replicablility (can the analysis be easily replicated across time or space?)
- Comparability (can the results be compared with other studies?)
- Affordability (do the expected insights warrant the cost of the study itself?)

Since the main focus of this article lies on impact analysis, I will, in the following, only briefly address the other approaches, which seem to have been implemented by the NLB reasonably well already.

Service Audit and Customer Profiling

Before being able to do any meaningful assessment of the performance of public libraries one has to take stock of all the services offered and of all the different people served. This stage also forms part of any basic customer research and marketing strategy. Thus, the primary questions to be answered are the who, what and why of library usage. Profiling services and patrons is a necessary first step in better understanding where the library is providing value and where there might be waste or undersupply. At the end of such an exercise, a service/user matrix can be constructed that lays the groundwork for ensuing impact analyses (e.g., Holt and Elliott 2002).

A non-comprehensive list of typical library services includes:

- Book loans
- Audio-visual loans
- Serials and magazines
- Reference services
- Access to electronic databases and the internet
- “Safe haven” environment

Some of the most popular reasons for visiting libraries that have been identified in many previous studies are:

- Recreation and entertainment
- Self-development
- Business

A popular typology of groups benefiting from library services differentiates between (McClure et al. 2001: 4-5):

- Individuals and households
- Businesses
- The community and public in general

These broad types can then be further specified so as to be useful in a customer needs study. In the context of Singapore, the NLB has expressed a particular interest in understanding the special needs of the following groups (NLB 2005a):

- Children
- Teenagers
- Elderly
- Lower-income and lower-education segment of society

With regard to the socioeconomic characteristics of library patrons and library usage patterns, a study by the Singapore Department of Statistics based on data collected in the year 2000 found that across all age groups females were more likely than males, and children more likely than adults to have borrowed books from a public library (Yeo 2002). There was also a marked difference between ethnic groups, with Chinese showing the highest and Malays the lowest tendency to borrow books across all age-groups. The propensity to borrow books is also positively correlated with educational qualification.

Furthermore, a general preference for non-fiction books can be found for borrowers aged 15 years and above, which might indicate that these patrons indeed read for work and self-improvement rather than for recreational purposes. The rate of non-fiction loans is highest among managers and professionals (i.e., 83.7%) who also constitute the biggest group of book borrowers among working persons (33%) as compared to, for example, production workers (11.5%), one of the most underrepresented social groups. Similarly underrepresented among book borrowers are people aged 45 and above as well as people with an educational qualification lower than secondary school. In fact, these three factors (i.e., age, education and occupation) are likely to be highly correlated.

While the previous study provides insights into the characteristics of book borrowers, it is restricted in terms of the variables considered (i.e., demographic and socioeconomic variables) and with regard to the type of people included in the analysis (i.e., only library users). An insightful study based on a survey of the general population (i.e., including non-library users) was performed by Kau et al. (2003). Based on attitudinal, motivational and behavioral information, this study tried to segment Singaporean residents into different groups with regard to their learning-related lifestyles and library usage habits. The authors found seven different lifestyle types: (a) Career-minded people (16%), (b) active info-seekers (12%), (c) casual readers (19%), (d) self-suppliers, who prefer to buy their own books (10%), (e) narrow-focused learners, i.e., mostly students (9%), (f) low motivators (17%), and (g) facilitators, i.e., mostly older female caregivers (17%).

In 2004, the NLB performed another nonuser analysis. It was found that 38% of the population were not using public libraries. The five adult nonuser groups differed with regard to the top-three reasons for nonuse, e.g., lack of interest, work commitment, family obligations, literacy issues, and other sources of books (Varaprasad et al. 2005: Annex A).

While surveys are useful for profiling users and in particular nonusers, libraries also possess rich secondary data in the form of user records and usage statistics. This data can be enriched further by connecting it to census data as, for example, in the study by Yeo (2002). In fact, the integration of user data and census data in a unified GIS framework has gained some interest recently. Such integration provides a promising means for fine-tuned market analysis and customer research, because it allows the market of people potentially and actually served to be better gauged (Hawkins 1994; Jue et al. 1999; Koontz and Jue 2004; Koontz 2005).

Capacity and Transaction Analysis

Based on a clear understanding of what services they offer and who their users are, libraries are better able to meaningfully tally the inputs and outputs of their work, which will then help them to improve their planning and decision making. Capacity and transaction measurement have become the bread and butter of statistical data collection in libraries (e.g., collection size and age, membership, loans and visits). A rich set of established metrics has accumulated over time (e.g., Van House et al. 1987), and the IT revolution has added another host of easily collected and quantifiable data (e.g., "e-metrics"; for a standard developed in the US-American context see www.niso.org/emetrics; for efforts building on the ISO 11620: Library Performance Indicators see www.equinox.dcu.ie/reports/pilist.html). However, old caveats regarding the proper compilation, interpretation and use of output measures are still valid today (e.g., McClure et al. 1986). It also remains to be seen whether such data will indeed deliver new insights or just add to the information overload of library managers.

The NLB is currently monitoring a wide range of input and output metrics as a look at its "fast facts" homepage and annual reports reveals. However, while aggregate data can give general ideas of output performance, disaggregated data will be more useful for planning and deciding where to deploy scarce input resources. Furthermore, while the public sector of Singapore has a very good reputation in terms of efficiency, and the NLB is no longer an exception here, it has to be noted that efficiency is a good with diminishing marginal returns. Thus, while time and cost savings are certainly crucial objectives, they need to be complemented with equally deliberate efforts to improve the type and quality of services provided.

Service Quality and Customer Satisfaction Analysis

Service quality and customer satisfaction surveys have become a fixture in any forward-looking organization thanks to the influence of the quality management movement in general and international standards like ISO9001:2000 and popular management tools such as "balanced scorecard" in particular. As in the case of descriptive output metrics, one can now turn to a broad range of literature on how to improve the quality of library services and how to successfully promote public libraries to stakeholders (e.g., Hernon and Whitman 2001).

In terms of both quality management and customer satisfaction, the NLB has been very successful. In 2004, the NLB won together with two other organizations the coveted Singapore Quality Award. Part of the requirements for this award is the implementation of a formalized system for soliciting and acting upon customer satisfaction feedback. To my knowledge, the NLB does not publish its customer survey results regularly. But the NLB's application report for the Singapore Quality Award provided a few glimpses of its performance in this particular domain (NLB 2004). Customer satisfaction levels rose from 3.62 in 1999/2000 to 4.19 in 2003/4, with a peak in 2002/3 of 4.24 (with 3 marking a neutral and 5 a very satisfied stance). Furthermore, the overall compliments to complaints ratio improved from 0.3:1 in 1999 to 17:1 in 2002 (Varaprasad et al. 2005).

IMPACT AND OUTCOME ANALYSIS

While the previous two analytical strategies are mostly descriptive in nature, impact analysis assumes an explicit cause-effect relationship. The current shift in interest towards outcome and impact measurement can be seen as part of a general call for "evidence based" decision and policy-making (as compared to merely relying on received professional wisdom). Hence, policy evaluations are no longer framed in terms of "What have we done to achieve our goals?" but in terms of "What has effectively changed as a result of our work?". Detailed accounts of previous conceptual and empirical work done on the socioeconomic impact of public libraries can be found in Debono (2002), Kerslake and Kinnell (1998), Poll (2003) and Usherwood (2002).

What Kind of Impact, Outcomes and Benefits?

In estimating the benefits of public libraries, the following questions have to be addressed: Who defines impact? And how is benefit to be measured? The challenges involved in answering these questions, and thus in measuring the outcomes of public libraries, become particularly evident if we take into account the following dichotomous distinctions with regard to the nature of potential benefits due to the existence of public libraries:

- Individual / collective
- Short-term / long-term
- Direct / indirect
- Tangible / intangible
- Quantitative / qualitative
- Monetary / non-monetary
- Objective / subjective

For example, benefits can accrue to individuals (e.g., library users) as well as to the society at large (e.g., nonusers). Some library services might have a more tangible and immediate impact (e.g., book loans and online job search) while others are more intangible and long-term (e.g., conservation of cultural heritage and information literacy). Should measures be quantitative or qualitative, and if the former is the case, should they be monetary or non-monetary in nature? Measurement strategies can also differ in the way they try to capture monetary value, i.e., by imputing objective monetary benefits of library services based on market observations or by building on the perceived value attached to such services by survey respondents. Finally, is it the individual users, the funding agencies or taxpayers who should define exactly what impact and benefits are to be considered important?

Such considerations have to be dealt with cautiously before embarking on any research on the impact and benefit of public libraries as the likely results will be influenced by the decision as to what specific perspective to apply. Furthermore, the chosen perspective also determines the range of appropriate research techniques available.

Case Studies and Anecdotal Evidence

Probably the most convenient way to illustrate how public libraries contribute to society and the economy is through concrete case studies. Well designed case studies can provide many useful insights into the why and how public libraries played a crucial role in the successful undertakings of different types of patrons. In fact, a rich and rigorous descriptive case study is probably more useful than a study based on carelessly compiled and interpreted “hard” data. However, case studies are less suitable if the objective is to quantify and generalize the impact of public libraries to the wider population.

In the Library 2010 report, there are many hypothetical miniature anecdotes interspersed as a literary means to illustrate the aspirations of the NLB with regard to its role in making a difference in the lives of its clientele. One can probably safely assume that efforts are currently afoot to collect real case studies.

Cost-Benefit Analysis

The need to provide evidence of the value and worth of public libraries’ services in dollars and cents, has given rise to the application of financial cost-benefit and return on investment analysis (Holt and Elliott 2002; Holt and Elliott 2003; Holt et al. 1996). While gauging the operating costs of public libraries is relatively straightforward, the determination of benefits is more intricate. As we have seen above, this is primarily due to the difficulty of attaching monetary value to often intangible and long-term outcomes. There are three main strategies that have been employed to empirically assess the economic impact and monetary value of public libraries:

- Macro-economic impact
- Contingent valuation
- Economic value

The macro-economic impact of investments in libraries can be estimated by econometric input-output multiplier models. These models try to establish how much of a ripple effect the original investments in public libraries create over time in terms of, for example, additional jobs and new business opportunities created due to increased income and consumption (e.g., Barron et al. 2005; Griffiths et al. 2004a; Griffiths et al. 2004b). These models are rather complex and are predicated on the availability of econometric equations that adequately represent the presumed economic interdependencies.

The *contingent valuation* and *economic value approaches* can be best illustrated by using the concept of consumer's surplus. Consumer's surplus refers to the benefit that accrues to those consumers who in principle would be willing to pay more for a good or a service than the current market price. Thus in Figure 3, where the downward-sloping bold line represents the demand curve for a market-equivalent of a given library service (e.g., borrowing books and audiovisual materials, accessing electronic databases etc.), the amount of service demanded at market price P_M is X_M. The total consumer surplus in this case is represented by the dark-shaded triangle AP_MF.

However, at the prevailing market price PM, lower-income groups would be deprived of such services. It is indeed one of the core social functions of public libraries to provide economically disadvantaged groups with access to such desirable resources (Kerslake and Kinnell 1998). Thus, with the availability of a public library the same service can be accessed by more people, i.e., X_L, at a much lower, subsidized price PL. The total consumer surplus has now grown to AP_LD.

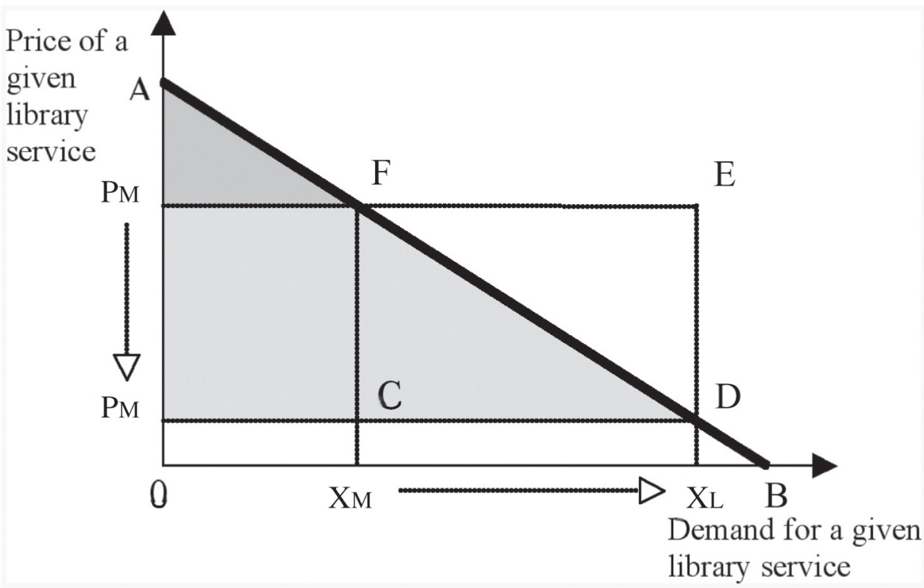

Figure 3: Consumer's surplus framework

One challenge is, of course, to determine the exact nature of demand curve *AB* and the amount of PL. For instance, apart from a nominal membership fee, P_L will also have to include the opportunity costs associated with visiting a library in terms of time and money spent. To estimate the demand curve, the strategy applied by the contingent valuation approach consists of (a) directly asking people how much they would be willing to pay for a library service if the library was closed and they had to purchase this service in the open market, or (b) asking them how much more in income taxes they would be willing to pay for keeping libraries open (e.g., Aabø 2005a; Aabø 2005b; Holt *et al*. 1998; Holt *et al*. 2001).

Thus, the subjective monetary benefits are estimated by taking into account individual opportunity costs and the hypothetical "willingness to pay". However, this approach does not pay sufficient attention to the problem that individuals with lower incomes will tend to state a lower willingness to pay than the actual value these services might represent to them. In this regard, the economic value approach fares better (Hawkins *et al*. 2001; Morris *et al*. 2001; Morris et al. 2002; Sumison et al. 2002; Sumison *et al*. 2003). This approach tries to estimate the "objective" aggregate social cost-savings produced by the existence of a library service such as book borrowing by comparing the costs for providing this library service with the costs incurred by individuals if they had to purchase books at market value. Simplifying matters somewhat, the aggregate savings would then amount to the rectangle $P_M P_L DE$ in Figure 3.

Over the past 10 years, a number of studies have been commissioned by public libraries, mostly in the USA and UK, in a bid to empirically establish the financial value that they provide to their stakeholders. The following studies applied one or a combination of the above three strategies with a varying degree of sophistication (for a more detailed discussion of some of these studies see also McCallum and Quinn (2004) and Missingham (2005).

- Public Library Use in Pennsylvania: Identifying Uses, Benefits, and Impacts (McClure and Bertot 1998)
- Public Library Benefits Valuation Study (Holt *et al*. 1998; Holt *et al*. 2001)
- Economic Benefits and Impacts from Public Libraries in the State of Florida (Fraser *et al*. 2002; McClure *et al*. 2001)
- Measuring the Economic Impact of the British Library (Pung et al. 2004)
- Taxpayer Return on Investment in Florida Public Libraries (Griffiths *et al*. 2004a; Griffiths *et al*. 2004b)
- The Economic Impact of Public Libraries on South Carolina (Barron *et al*. 2005)
- The Seattle Public Library Central Library: Economic Benefits Assessment (Berk & Associates 2005)

The three strategies produce results that are highly dependent on the more or less informed assumptions made by the researcher. Thus, the monetary values derived from such studies are only realistic with qualifications. A particular weakness of most studies that applied the first and/or second approach is a general neglect of alternative uses for public funds allotted to public libraries. A traditional return of investment analysis would usually assume a context in which competing alternatives exist and thus a need for a trade-off decision arises. However, contingent valuation and macroeconomic impact studies, which invariably show impressively high overall monetary benefits, often operate in a conceptual vacuum by not addressing issues such as opportunity costs and alternative investment opportunities for public funds. Thus, these studies are generally able to establish that the macroeconomic value and the perceived value of public libraries in the eyes of users and nonusers exceed the direct operating costs, but they do not address how much higher or lower these benefits are compared to the other potential uses of the funding.

Furthermore, the scenarios presented to respondents in contingent valuation surveys usually only present a choice between current levels of library services vs. no library services at all. But from the point of view of a funding agency the question presents itself usually in a different way, namely whether scarce financial resources should be allocated to other public services that might provide either more of the same benefits or different but preferable ones. Thus for a more discerning public decision maker, the results might be of limited utility and credibility. In fact, in order to minimize the influence of vested interests, funding agencies themselves might be the most appropriate institution for commissioning comparative contingent value studies that assess competing public services, such as public radio and television, sports facilities, neighborhood parks, public libraries etc. But even for the public library management who commission such studies, a contingent valuation that compares concrete policy alternatives would provide more useful insights than a holistic study that produces reassuringly high aggregate numbers, which might possess a promising marketing potential but rather limited actionable value. Furthermore, good valuation studies tend to be very elaborate and expensive, and thus the very cost-benefit ratio of these studies might be questionable.

Social Audit

Obviously not all potential social and economic benefits that library services entail can be objectively quantified, much less monetarized, in a straightforward manner. It would however be foolish to neglect or downplay such intangible contributions just because no dollars and cents value can be attached to them. Yet, one also has to acknowledge that decision makers cannot just rely on anecdotes and assurances by library representatives that what libraries do is indeed important and does make a difference in people's lives and in the community as a whole. Such assertions need to be substantiated by evidence, be it based on hard or soft, monetary or non-monetary indicators. A social audit is a means to gather such supporting evidence (Bryson *et al*. 2002; Linley and Usherwood 1998; Usherwood 2002; Usherwood and Linley 1999).

Proponents of the social audit approach strive to avoid the danger of "measuring what is measurable while missing what is important about a service" (Usherwood 2002: 120). Similar to case studies, a social audit is often largely qualitative and descriptive in nature but unlike the latter, it is more complete and formalized in that it tries to establish the impact of public libraries by contrasting the views and perceptions of different stakeholders as to the extent that their objectives have indeed been fulfilled. Furthermore, while deliberately downplayed, quantification is not ruled out in principle and can always be incorporated in an audit where appropriate. It would appear that like in the case of contingent valuation and economic impact studies the most valuable insights would also be gained if a research study is specific and focused on concrete policies and decision choices. As such, library management has to be very clear about what they need to know, and why, before embarking on any kind of research.

Recently, the substantial indirect and collective value of public libraries has been highlighted in the discussion on the provision of social space and the creation of social capital, a growing non-core business of public libraries (Cox 2000). As part of a deliberate repositioning and reinventing strategy, public libraries have shed their drab and dusty image and are now in many eyes a hip place to be. As a result, their boundaries with traditional community centers are blurring. Libraries are now also conceived of as a "safe haven" for children, as a neighborhood center or as a family recreational place. However, while there might be considerable consensus as to the desirability of this contribution, it seems evident that it is virtually impossible to meaningfully quantify it in monetary terms. Yet library management and public decision makers would still want to know how well different libraries and policies perform in this regard. A social audit study which gathers the views of various stakeholders by applying different methodologies would at this stage seem the most feasible and appropriate approach (e.g., Hillenbrand 2005a; Hillenbrand 2005b).

HOW TO MEASURE THE SOCIOECONOMIC IMPACT OF PUBLIC LIBRARIES IN THE SINGAPOREAN CONTEXT?

As mentioned earlier in this article, impact studies presume an underlying cause-effect nexus. However, causality can only ever be established in an experimental setting. Obviously, the possibilities of experimental interventions are limited in the context of public libraries. For example, it is simply not possible for ethical reasons to deprive some people of access to libraries and then see whether they fare worse than people who have access to public libraries. Thus, much inference regarding the impact of libraries is indirect and subjective, i.e., interviewees might agree or disagree as to the beneficial role that libraries play in their lives and their actual usage behavior might or might not conform to the intentions of the service providers. Such limitations continue to make impact analysis a difficult endeavor.

Having discussed some of the general challenges involved in assessing the impact and benefits of public libraries, I now turn to the challenges arising in the Singaporean context and in particular in view of the four main outcome objectives outlined in the NLB's Library 2010 report. The following thoughts are preliminary and, therefore, necessarily brief and general in nature.

Individual and Collective Upgrading and Lifelong Learning

One of the core functions of public libraries consists in providing support for lifelong learning. It is probably here where individual and public benefits overlap most directly. As Singapore charges ahead in its socioeconomic development there are a growing number of people who do not possess the right skill-set to take full advantage of emerging opportunities. While libraries can certainly not replace educational institutions that provide formal skill training for adults, they can contribute to and help maintain a positive attitude towards learning.

One issue public libraries are particularly well positioned to address is information literacy, i.e., the ability to find information and judge its quality (Poll 2003). Based on five years of teaching experience in a Singaporean university, this author has come to the conclusion that many undergraduate students are wanting in terms of independent learning and information literacy. However, one has to highlight that this is very much the result of an education system that until recently was almost exclusively based on spoon-feeding, rote learning and extrinsic motivation. Thus, extrapolating from this admittedly limited experience, a rather large need for remedial action can be assumed.

In this context one has to wonder what the unintended consequences of a well-meaning service recently introduced by the NLB might be. With "ASK!" anyone who has a question on any subject can now approach librarians who will try to answer it by providing the requisite information. However, this seems like a double-edged sword. While this service certainly addresses an immediate customer need, it might undermine the long-term social goal of increased information literacy. For instance, an eleven year old Primary 5 pupil was quoted in the newspapers as follows (Straits Times, 9 May 2006):

"When I do a project and I do not know the answer, I call the library. Other times, I am just very curious about something. I asked the library who named the planets in the solar system, then it gave me the answer. It's very good and fast."

A positive reading of this statement would highlight how pupils like him will now get their questions answered quickly and correctly. A more skeptical reading would point out that this quote reflects a widespread attitude held among Singaporean students, namely that only the (correct) answer, and not the way how one arrived at it, is of importance. Knowledge is primarily conceived as a commodity and not as the result of a discovery process. Thus, pupils will not learn how to actively seek out information on their own and to discriminate between sources of different quality.

Be that as it may, measuring public libraries' significance in lifelong learning seems particularly difficult. However, a gap analysis might be helpful in establishing whether patrons actually use public libraries as intended and how effectively they do so. Interviews and surveys can provide estimates of the subjective benefits enjoyed by patrons in their quest for life-long learning. The analysis of computer logs and borrowing records could add some objective information regarding the likely social benefits.

First Stop for Asian Content

Singapore follows a time-honored strategy of wanting to become the regional hub in virtually any domain it perceives to have a comparative advantage in. Thus, it is not surprising that the NLB should aspire to become the first stop for Asian content.

Of the four desirable outcomes discussed here, this is probably the easiest to deal with in so far as it is sufficiently specific. However, looking at it more closely, the issue is not as straightforward either. What does first stop for Asian content really mean? Does it involve making such content directly available physically and/or electronically, or does it mean being a broker and clearing house for Asia-related content?

The process of becoming a prime provider of Asian content would probably involve a benchmarking strategy with existing local and international centers of excellence (What do they have to offer and who uses their services?). It could also involve a strategy of reputation building by actively promoting research and scholarship under the NLB's auspices. Incidentally, in 2006 the NLB is offering for the first time the Lee Kong Chian Research Fellowship. This might then form the basis for a word-of-mouth process and for a future outcome measure that could complement the traditional usage and quality of collection metrics. For example, the relative success and reputation of NLB's Asian collection could be assessed by soliciting the subjective opinion and judgment of eligible experts and stakeholders, much like in the rankings of universities (e.g., recruiters' opinions) or global cities (e.g., expatriates' opinions).

Physical and Virtual Space for Social Interaction and Collaboration

With the convergence of public libraries and community centers, the role of the former in building social capital has become more prominent. Libraries provide social interaction spaces where collaboration can take place and trusting relations can be formed. As such they are believed to enhance social inclusion and cohesiveness.

The questions of who is doing what where and with whom in the library can be answered by means of surveys. More specifically, time budget studies and participant observation of usage and interaction patterns could be very useful in understanding the nature of the social processes taking place under the auspices of public libraries.

Furthermore, the fact that the different branch libraries were not built or renovated all at the same time but in stages constitutes probably one of the few opportunities where natural circumstances allow for quasi-experimental comparisons, because different architectures and layouts exist contempo¬raneously. Thus, it would be possible to study which ways of organizing library spaces are most promising in enhancing social interaction and collaboration.

Equitable Access to Public Library Services

The social function of public libraries makes equitable access to their services a major issue (Usherwood and Linley 2000). But apart from reducing access barriers, the capability of patrons to leverage on the available resources is equally crucial. Thus, libraries have started to proactively engage in activities such as IT skills teaching.

The positive role played by libraries in overcoming the digital divide has been documented in various studies (Jue *et al*. 1999). In Singapore, the NLB has played an important role in promoting both IT savvy (Munoo and Narayanan 2005) and information literacy among the wider population (Ngian and Munoo 2005).

To what extent library usage is indeed equitable or whether there are inequities among different user groups can be assessed by analyzing user and usage data in conjunction with census data. As we have seen earlier, there are indeed differences in terms of library membership among, for example, age and ethnic groups in Singapore (Yeo 2002). It might also be insightful to analyze the extent to which neighborhoods with different socioeconomic profiles differ in their aggregate library usage patterns.

CONCLUSIONS

Assessing the socioeconomic impact of public libraries is a challenging task. In this article I have discussed a couple of popular approaches devised for estimating the individual and social value and benefits arising from the availability of public library services. Furthermore, some general considerations regarding the proper design of such studies were also highlighted, as were four of the main outcome goals identified by NLB's Library 2010 strategy report.

So what advice, then, could one give to the NLB's management in its journey from efficiency to effectiveness?

To the extent that there might indeed be insufficient knowledge regarding the aggregate perceived benefit of public libraries, large-scale holistic valuation studies could be useful for establishing baseline information that would allow future outcomes and progress to be judged better. They might also possess a considerable marketing potential and could further contribute to the sizeable goodwill that Singaporean public libraries probably already enjoy both in the public opinion and in government circles.

However, as repeatedly argued above, more specific, policy-oriented studies would be of greater utility to library management in terms of actionable insights into how public libraries influence the socioeconomic landscape. This is especially true if such studies are conceived within a longitudinal and comparative perspective (e.g., across time, branches, services, customer groups, or before and after a policy intervention etc.).

Finally, the collection of traditional user and usage data is not obsolete. In fact, the information contained in such data has not always been fully explored.

Judging from a number of available conference papers, the NLB has undertaken many interesting internal studies in the past (e.g., Munoo and Narayanan 2005; Narayanan and Munoo 2003; Ngian and Munoo 2005). However, what seems lacking, at least from the perspective of an outsider, is an integrated and rigorous assessment framework that binds these and other studies together in a coherent way. Such a framework could then also form the backbone of a continued formal impact assessment process centered on the following successive evaluation steps: Formulation of a social or individual outcome goal ➔ description of status quo ➔ strategy formulation ➔ policy implementation ➔ formative and summative evaluation ➔ description of pre/post intervention change ➔ estimation of objective and/or subjective benefits. The NLB possesses a considerable wealth of experience in prototyping and pilot-testing policy innovations and thus should be in a good position to engage in habitual pre/post policy intervention evaluation.

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