

Contribution to the Entailment Citizen: Estimate the Social Return on Investment of the Parliamentary Libraries

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Abstract: Parliamentary libraries are embedded inside parliaments and the services provided are related to its role in supporting parliamentary work mainly, but these services are also used by society. The question arises of what worth they represent these services to the community that uses them and how to determinate the worth they bring parliamentary libraries to society. We propose a model that considers the use of the methods of the market prices assignment and contingent valuation to determine the social return in investment. This proposal was applied to a case study in the Library of the National Congress of Chile, to identify specific aspects of use and economic impact of the main associated services to the strategic objective of Entailment the National Congress with the Society, finally estimate the social return on investment. The result of this study shows an important difference between these two methods to determine the return for every dollar invested in the service, for assignment of market prices social return on investment was from USD 5.7 and for contingent valuation was USD 0.51. That difference is explained by the number of users who use the face-to-face services and the users who use only the services supported by the information technologies, due to the lack of knowledge of available services.

Keywords: Parliamentary libraries, worth, market prices assignment, contingent valuation, social return on investment

1. Introduction

Parliamentary libraries provide services related to the role of support parliamentary work and its dissemination to the population, these services are also used by society in general. Public investment and the advancement of technologies have made this information available in more accessible formats and citizen have been empowered (Trejo Delarbre, 2016), has these transparency mechanisms according to different laws that allow to know in detail investment, but does not have specific information on the contribution or return that this investment represents directly towards citizens. Given this

scenario, parliamentary libraries are not exempt from these contingencies, therefore, the need arises to have tools that allow measuring the services they provider, specifically in the context of the relationship with society considering the value they provide, both in the social field as economic.

Libraries deliver value to people and institutions; however, when there are financial crisis or increases in demand of information, born the need to measure and demonstrate the value of the services (Tenopir, 2012).

There is an acceptance that we need better ways to quantify the social and economic value, both for the public and private sectors, regardless of the terms involved, impact, return, benefit, value, because the important thing is to understand and manage this value or exchange rate and how much of that change we are making. (Nocholls, Lawlor, Neitzert, & Goodspeed, 2012).

Economic studies in the field of libraries have been generally addressed in three ways, economic value, impact evaluation and the nature of service provision. These are methods that attribute an economic value to the set of library programs and services, demonstrating the efficiency in the use of public resources when creating value (Bawden, et al., 2009).

The economic value can not be calculated by conventional “supply and demand” procedures, but by means of methodologies, the social and economic contribution to society as a whole, measuring the return on investment (ROI). The techniques are based on methodologies that allow to give a value to the services provided according to market prices estimating the benefit received by the users of this type of goods and how much they are willing to pay for them, these methodologies are assignment of market prices of comparable goods and contingent valuation.

Finally, the social return on investment which comes from the traditional economic term of return on investment (ratio that contrasts benefits and costs), differs from the traditional term since these ratios are linked to the impacts derived from the public service analyzed (external projection) and not only to the activities that take place internally (benefits and costs).

2. Estimate the social return on investment

To estimate the social return on investment requires an identification of the services that are related between the parliamentary libraries and the citizen link. This proposal combines two research methods: Contingent Valuation, this consists in the application of a random survey to the users of the library, allows us to obtain an accurate view of the services used and the valuation in monetary terms that the users have defined on all the received services, that is, obtain directly from the users how much they would be willing to pay for the different public services received. The second method used is Market Prices Assignment, which consists of breaking down the public and free services offered by

libraries, to assign a monetary value according to a market price for similar services, where the main difficulty is given by the way of objectively translating the market price to the real value of the services offered by public libraries (Luria i Roig & Pintor González, 2011).

Next we will explain the different phases that will allow us to determinate the social return on investment:

Phase 1 – Identify services:

The services related between parliamentary libraries and the society for this study are bibliographic loans, bibliographic advice, reference services, bonding and training activities, downloads of electronic documents, use of computers and access to Wi-Fi in reading rooms, and donations of bibliographic resources.

Phase 2 – Survey users:

This phase is part of the contingent valuation method and seeks to determinate through a survey the characteristics of library users, the main uses and valuation of services. The survey is based on the study carried out by (Yáñez, 2013), adapted for our study due to the characteristics of parliamentary libraries.

Phase 3 – Contribution to research:

The application of the survey shows relevant information for the social return on investment, here the real contribution of libraries is given by to research through doctoral and master students, we applied the expressions (1), (2) and (3):

Teachers and researchers:
$$evtr = \sum_{x=1}^n pr_x pt_x ph_x ltx_vh_x cp_x \quad (1)$$

Where evtr: Economic value teachers and researchers, x: Allocation of times, pr: Percentage of responses, pt: Percentage of time, ph: Projected hours, lt: Location time, vh: Value per hour work, cp: Contribution percentage location institution

Students who research:
$$evs = \sum_{x=1}^n pr_x pt_x ph_x ltx_vr_x cp_x \quad (2)$$

Where evs: Economic value students, x: Allocation of times, pr: Percentage of responses, pt: Percentage of time, ph: Projected hours, lt: Location time, vr: Value of reading, cp: Contribution percentage location institution

Contribution to the research:
$$evr = evtr + evs \quad (3)$$

Where evr: Economic value research, evtr: Economic value teachers and researchers, evs: Economic value students

Phase 4 – Contingent valuation:

As in phase 3 from the application of the survey relevant information, in this case corresponds to the economic value that the user declare to be willing to pay for the services provided by the libraries if they were through a private company, to obtain that value we applied the expression (4):

Contingent valuation:
$$evcv = \sum_{x=1}^n pr_x ta_x eu_x ma_x nm_x + evr \quad (4)$$

Where evcv: Economic value contingent valuation, x: Value assignment, pr: Percentage of responses, ta: Total answers, eu: Elevated users, ma: Monthly average, nm: Number of months, evr: Contribution to the research

Phase 5 – Determine the unit monetary value of each service:

The objective of expressing in monetary units the benefits obtained for a person making use of each of the services, the method of Market Price Assignment has been used, which is an analogy between the services of the library and the substitute services in the private market.

Bibliographic loans: This service is one of the most significant for a library, the criterion for the allocation of an unit value to each loan borrowed has been applying a discount factor of 60% to the average price of the commercial value of the 10 most requested titles. To obtain the unit value for each borrowed specimen the formula (5) was applied:

Bibliographic loans:
$$uvl = \left(\frac{\sum svc}{nrt} \right) * discount \quad (5)$$

Where uvl: Unit value loan, scv: Specimen commercial value, nrt: Number of most requested titles, discount: is a Discount factor (60%)

Bibliographic advice: Among the task related to bibliographic advice, the selective dissemination of information, recommendations, documentary search and reference service were considered. The calculation is based on the average monthly salary of each professional obtained from the WageIndicator Foundation for Chile and a proportion of the working day devoted to counseling. To obtain the unit value for bibliographic advice formula (6) was applied:

Bibliographic advice:
$$uva = ac * discount \quad (6)$$

Where: uva: Unit value of advice, ac: Average compensation, discount: Advisory factor

Reference services: This service includes queries made by users through the different contact platforms. The calculate the monetary value has been assigned an average value for a reference service, this value is given by the average percentage of time used to pay attention to a reference according to the average salary of the professionals. The formula (7) was applied:

Reference services:
$$uvr = atr * vhw \quad (7)$$

Where uvr: Unit value reference, atr: Average time response, vhw: Value hour work

Bonding and training activities: The libraries carry out different free bonding and training activities with the citizenship. In order to calculate the monetary value the information of the Ministry of Labor of Chile has been taken as a base to obtain the value of the teaching chronological hour, we can estimate that to calculate the unit value for each assistant to say activity is the price factor of the hour with the average duration of the activity. To obtain the unit value we applied the formula **Error! Reference source not found.**:

$$\text{Bonding training activities: } uvbt = ah * ttv \quad (8)$$

Where uvbt: Unit value bonding and training, ah: Average hours, ttv: Teaching time value

Downloads of electronic documents: The availability of access to information technologies has allowed institutions to have their resources available in electronic format, through the Internet and corporate networks, such as books, documents, studies, among others. To calculate the monetary value of each download of electronic documents, the value proposed by the Network of Spanish University Libraries in dollars was taken as a basis.

$$\text{Download electronic documents } uvd = USD 2.5 \quad (9)$$

Where uvd: Unit value download

Donations of bibliographic resources: The libraries make different donations of bibliographic material to institutions. To calculate the monetary value we used the same value to calculate the unit value for loans. To obtain the unit value for each donated copy the formula (10) was applied:

$$\text{Donation of bibliographic resources: } uvdo = \left(\frac{\sum scv}{mnt} \right) * discount \quad (10)$$

Where uvdo: Unit value donation, scv: Specific commercial value, mnt: Most requested number of titles, discount: Discount factor (60%)

Phase 6 – Determine the use by type of service

Relevant activity to identify and specify the true use of the services offered by the libraries, the institution must generate the appropriate instances to record this information that allow continue with the development of this method and in addition constantly allow to evaluate the services.

Phase 7 – Calculate the economic value of each the services

To calculate the economic value of each of the services we used the formulas (11) through (16) :

$$\text{Bibliographic loans: } evl = uvl * tal \quad (11)$$

Where evl: Economic value loan, uvl: Unit value loan, tal: Total amount of loans

Bibliographic advice:
$$eva = \sum_{x=1}^n np_x uva_x \quad (12)$$

Where eva: Economic value of advice, x: Profession number, np: Number of professionals, uva: Unit value of advice

Reference services:
$$evr = \sum_{y=1}^n na_y uvr_y \quad (13)$$

Where evr: Economic value reference services, y: Number of reference, na: Number of answers, uvr: Unit value reference

Bonding and training activities:
$$evbt = \sum_{z=1}^n pa_z uvbt_z \quad (14)$$

Where evbt: Economic value bounding and training, z: Number of activity, pa: Participants activity, uvbt: Unit value bonding and training

Downloads of electronic documents:
$$evd = uvd * tad \quad (15)$$

Where evd: Economic value download, uvd: Unit value download, tad: Total amount of downloads

Donations of bibliographic resources:
$$evdo = uvdo * tado \quad (16)$$

Where evdo: Economic value donation, uvdo: Unit value donation, tado: Total amount of donations

Phase 8 – Calculate the benefit and the social return on investment

From the economic value of each service provided by the libraries proposed in this study its possible calculate the total benefit generated for a period of one year. When obtaining this value expressed in monetary unit's theses can be contrasted with the associated expenses. The expenses considered are directly linked to guarantee the operation and maintenance of the services of the libraries considered in this study. The costs of acquiring the different resources, the remuneration of the personnel linked to each service, the maintenance of computer system, supplies and others that directly affect normal operations must be considered.

To calculate the benefit we use the formula (17), which represents the sum of the economic values of the services provided:

$$Benefits = evl + eva + evr + evbt + evd + evdo \quad (17)$$

And to calculate the social return on investment we use the formula (18), which represents the ratio between the benefits and expenses:

$$SROI = \frac{Benefits}{Expenses} \quad (18)$$

Where SROI: Is the social return on investment, in other words is the amount returned for every Dollar invested, Benefits: Represents the sum of the economic values of the services, and Expenses: Represents the sum of the expenses for provide that services.

For this study we obtained two values for the social return on investment, according to Contingent Valuation and Market Prices Assignment. The two methods are used in parallel to obtain a broader view of the valuation of the services, in addition to addressing the difficulties that are present in the application of the contingent valuation method with respect to the bias in the honest answers of the people which could distort the valuation of social benefits in the provision of public goods (Carson, et al., 1998).

3. Case of study

The eight phases proposed for this model have been applied in the Library of the National Congress of Chile, an institution mainly oriented to support the parliamentary work, but which at the same time provides services that contribute to the linking of the National Congress with the citizenship. The results obtained are the following:

Phase 1 – Identify services: Those services considered for this study the use of computers and access to Wi-Fi in reading room has been excluded, since there are no specific data on the use of these, therefore it is not possible to calculate their impact on use or return, revealing opportunities for improvement in the management processes of services that impact on the way of quantifying and evaluating services.

Phase 2 – Survey users: The user survey was conducted between 07/01 and 09/15 of 2016, taking into account a representative sample according to the users who used the services in the same period of the previous year, 2015. This survey gave us relevant information regarding the users who use the services, their age, activity or profession, time they visit the library, the frequency, what activity they use it for?, how the services qualify, the most relevant services for their benefit, the contribution of the services for their professional activity, how they evaluate the professional of the reading rooms, how they value the total of the services if they were delivered by an external company, if they use the services of the web portals and for what they use.

Phase 3 – Contribution to research: This phase considers the responses of the users to the following survey questions: What is your activity or profession? What percentage of your time in the library do you use it for your professional activity? And what activity does the library use for? Based on these questions, the number of users dedicated to research and the contribution given by the library is specifically determinate to teachers and researchers, and also to students who investigate, where:

Table 1: Contribution to research

Users	Percentage	Contribution
Teachers and researchers	18.3%	USD 134,180
Students who investigate	45.1%	USD 600,842
Total contribution to research		USD 735,022

Phase 4 – Contingent valuation: The previous Total contribution to research plus the following question what value do you think about of the services that the Library provides could cost if they were through a private company? Then both thing previously detailed are considered to obtain the contingent valuation. The results give us the following contribution:

Table 2: Contingent Valuation

Type	Monthly Users	Contribution
Contingent valuation	147	USD 67,580
Total contribution to research		USD 735,022
Total		USD 802,602

Phase 5 – Determine the unit monetary value of each service: For this phase we have applied the formulas proposed in this study and its result is as follows:

Table 3: Unit monetary value of each service

Type of service	Worth
Bibliographic loans	USD 33.12 by title
Bibliographic advice	Librarians USD 693 monthly Library technicians USD 378 monthly
Reference services	USD 35.5 by reference
Bonding and training activities	USD 79 by activity
Downloads of electronic documents	USD 2.5 by document
Donations of bibliographic resources	USD 33.12 by title

Phase 6 – Determine the use by type of service

Table 4: Use by type of service

Type of service	Use (annual)
Bibliographic loans	16,237 loans
Bibliographic advice	80% and 90 % of the working day of 7 professional
Reference services	14,887 answers
Bonding and training activities	56 activities and 9,975 participants
Downloads of electronic documents	2,747,851 documents
Donations of bibliographic resources	3,038 units

Phase 7 – Calculate the economic value of each the services

Table 5: Monetary value by type of service

Type of service	Value	%
Bibliographic loans	USD 537,711	6.0 %
Bibliographic advice	USD 111,100	1.2 %
Reference services	USD 498,444	5.6 %
Bonding and training activities	USD 790,079	8.9 %
Downloads of electronic documents	USD 6,869,628	77.1 %
Donations of bibliographic resources	USD 100,608	1.1 %
Total value	USD 8,907,570	100 %

Table 6: Expenditures by type of service

Type of service	Expenses
Bibliographic loans	USD 29,288
Bibliographic advice	USD 201,745
Reference services	USD 169,404
Bonding and training activities	USD 481,474
Downloads of electronic documents	USD 503,840
Others	USD 184,827
Total	USD 1,570,578

Phase 8 – Calculate the benefit and the social return on investment

Table 7: Summary of the results according to Market Price Assignment

Results Market Price Assignment	Year 2016
Total value (benefits)	USD 8.907.570
Total expenses	USD 1.570.578
SROI	USD 5.7

Table 8: Summary of the results according to Contingent Valuation

Results Contingent Valuation	Year 2016
Total value (benefits)	USD 802.602
Total expenses	USD 1.570.579
SROI	USD 0.51

4. Conclusions

According to the calculation method market price assignment, every dollar invested in the services analyzed in this study returns USD 5.7 in benefits and for the second method contingent valuation returns USD 0.51 in benefits, both for the year 2016. When analyzing these results, we can deduce that the difference between the two methods is given by the number of users who use the face-to-face services and the users who use only the services supported by the information technologies, given the lack of knowledge of this segment of the quality and totality of available services.

If we observe the contribution of the download service of electronic documents, which contributes with 77.1% of the total and that is delivered through the different web portals available to the Library, it agrees with the wide difference that resulted in the analysis of the returns in benefits of both methods analyzed, which would indicate a trend towards the use of electronic resources supported by the advancement of information technologies.

Another important factor to consider is 63.4% of the use of services for doctorate and master studies, as well as for research, which means a real contribution to the link and social impact.

To improve the link with society it is necessary to adapt to new technologies, an important factor that reflected the survey, is that 92.7% of respondents have visited the website of the library and 63.8% do so for consul if a book is available, but there is no possibility of e-book loans according to these times.

Finally, the benefits according to the method of market price assignment represent 52,3% of the institution's annual budget, a significant value considering also that only the services related to the citizen's connection were

evaluated, not being considered the services that they go directly to the parliamentary function.

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