

Developing a Model Integral Impact Assessment

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Abstract:

The objective of this presentation is to show the process of building of a integral model impact assessment in the public libraries, to show their contribution to their local communities.

From this point of view, we try to answer the following questions:

- *What are the local environments affected?*
- *There is a correlation between human resources, skills and infrastructure the public libraries and impacts achieved?*
- *It is possible to develop an integrated index that allows us to define the achievements of libraries and the need to increase resources differentiated?*

So, how can we develop a comprehensive assessment model that enables us to know users , developing profiles use of the library and the public library relating to their human resources, skills and infrastructure, to correlate the social impact of public library in human development of each community.

For several years we have been conducting separate studies that point to know the users in libraries, to understand the effects generated by the library on them, meet the library as a whole. In this sense we wonder, libraries are or may become a vehicle for local development of the communities it serves the library?

In these pilot study we could see that is the disparate impact, the achieved are analyzed in different areas, such as human capital formation, economic, social and cultural. In the case of the Chilean public libraries often see a focus on and better achievement in the cultural aspects and social and of being much less intensive economic capital.

The results are in the design that contemplated rethinking the theoretical model, incorporating new variables in the impact study and analysis of social return statistics of public libraries.

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1. - In Search of a Comprehensive Model

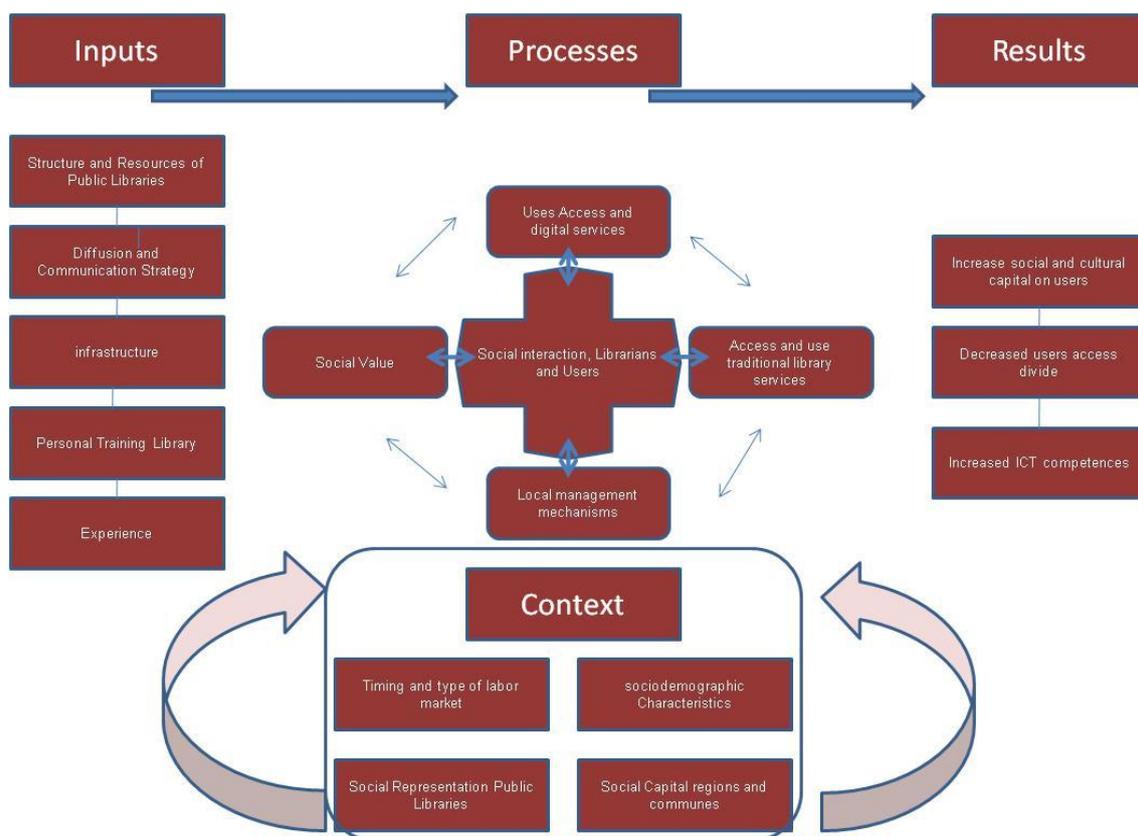
1.1. - First Evaluation Model

Since 2002, the National Public Library System has posed various study models for impact assessment of their services, mainly of its digital services from these experiences has worked in recent years in the development of a integral model to measure various aspects of the work of the Public Library in their communities and can use that information as a management tool that comprehensively characterize the Libraries and its impacts. That is, to visualize this impact in an integrated number, that would support the sustainability of the libraries, demonstrating their value they have in the development process of each community.

Thus, the first assessment model developed (see Figure 1) , try to know the public library as, inputs, technical skills and competencies of their staff. Infrastructure as librarian, spaces, square footage and and personal experience of the librarian in participatory management processes developed in their localities.

these inputs that they possessed the libraries,, were taken on a baseline that sought to measure the library without an intervention of new resources that will improve their conditions of technological infrastructure and staff skills in areas of use and community training in ICT , generating a characterization of public libraries as a whole.

Figure 1 Model 2002 Impact Assessment



In parallel, A study has been developed about of users and nonusers of Public Library, to learn about the contexts in which operate accessibility project and ICT training. In this sense, the baseline provides correlations crossed between data and the Library resources (human,

communication, infrastructure, etc.). Being able to map the libraries and its impact across a national sample of libraries and users.

The main results of this model are focused on the decrease of the gaps in access to the Internet, Computer and Increased Competence.

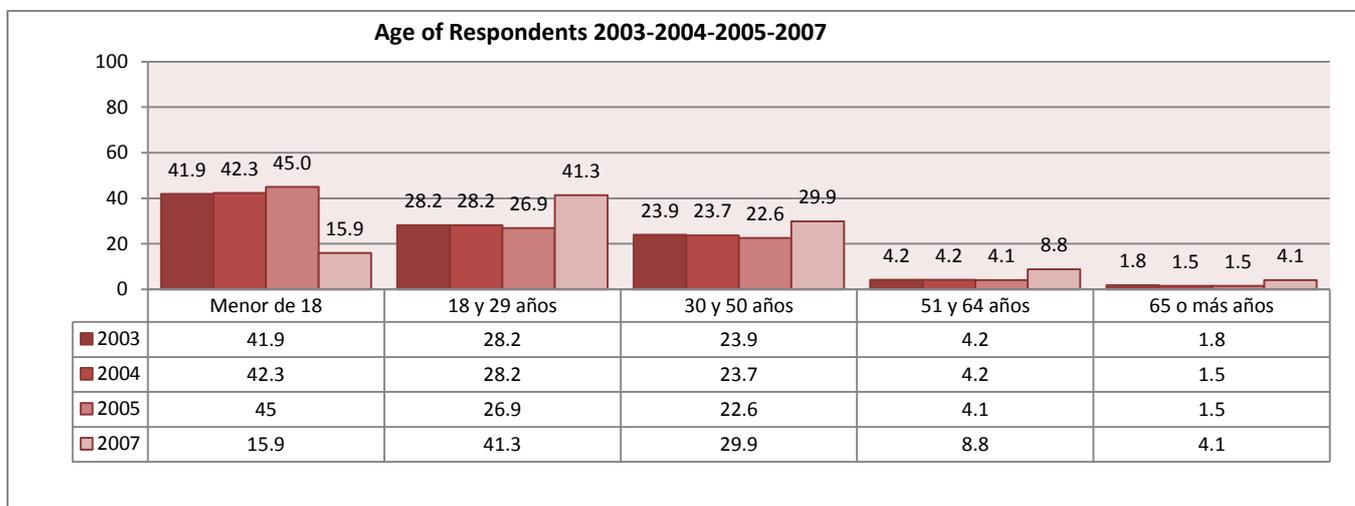
Table 1 Pincipal Impacts under this model

Variables	2002	2003	2004	2005	2006 ²	2007
Use PC Public Library	—	46	70,7	76	—	63
Levels handle No Internet	—	41,5	—	6,6	—	1,4
Index of Competence	—	7,1	7,6	9,4	—	11,1

What we can observe in Table 1, is that there was a positive impact on what the model was investigating, mainly associated with digital information access improvements through improved infrastructure and skills of librarians and cultural capital increase through development of information literacy in new library users. One aspect that did not further increase the share capital of library users, their capacity and ability to bond with other members of their community or beyond their direct territorial location.

This is mainly because they are not considered variables that measured virtual network participation through online communication, but rather their links with local networks characteristics of their communities, such as neighboring joints, sports clubs and cultural groups .

Graph 1 1 Comparative data on age profile of users of Libraries



In the development process of user profiles, was used then a classic demographic profile, targeted age, gender, ethnicity and income level. As can be seen in Figure 1 there is a change in users from 2007 interesting for the National Library System grow as adult age groups significantly. This is because constant work des school Public Library, not on the elimination of such users, but rather to gain new audiences, as you can see in the chart, where it grows mainly ranging from 18-29 years considered in Chile as young working age, this is because the library focuses its efforts on providing users with a range of technical tools and skills to

² In 2002 and 2006 data did not rise.

facilitate the employment opportunity of users in these, the same is observed for ranges of 30-50 years, and 51-64 years, but with an increase statistically less significant.

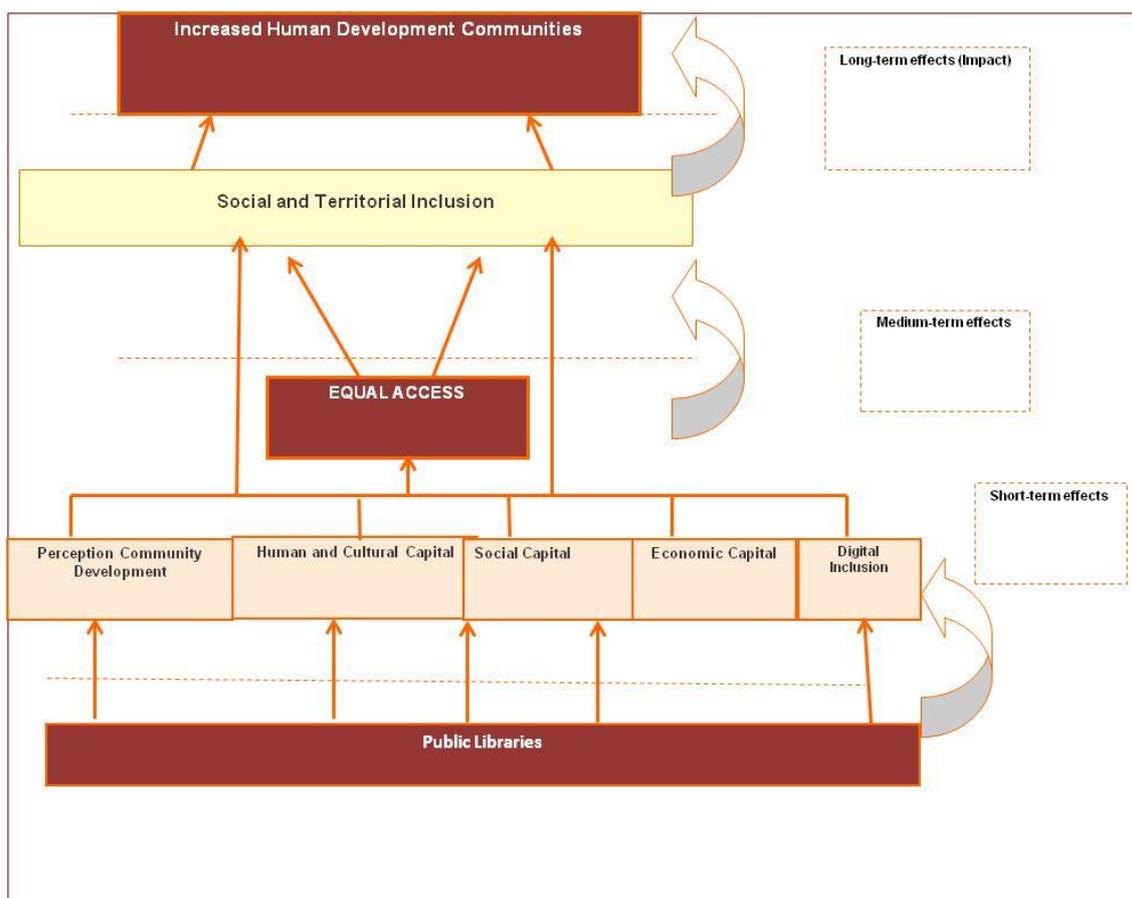
In this type of model is attractive the exercise of correlations between the Public Library as a whole, ie the public library designed as a series of resources to community and how these, through processes intermediation directly impact their user communities . This exercise allowed us to observe positive correlations in these areas, and a significant correlation in the case of the index of skills and access to ICT.

However, this model had shortcomings in that the data were very scattered and it was not possible to perform a joint measurement of the impact of the library in the community, there was no theoretical consensus that would allow for the increase in these indicators as necessarily positive.

1.2. - The Second Assessment Model

It is in this context that the proposal of a second model, based on the pyramid of impact indicators establishes different levels and different levels of effects on library users³. It also seeks to establish a measure similar to the Human Development measurement used by the United Nations Program for Development.⁴

Figure 2 Model focused on the contribution of local development Public Library⁵



³ Carrasco Arroyo, Salvador. Medir la Cultura. Departament d' Economia Aplicada. Universitat de Valencia

⁴ In onwards UNDP

⁵ In: http://www.cerlalc.org/files/tabinterno/1d0edf_Modelo_DIBAM.pdf

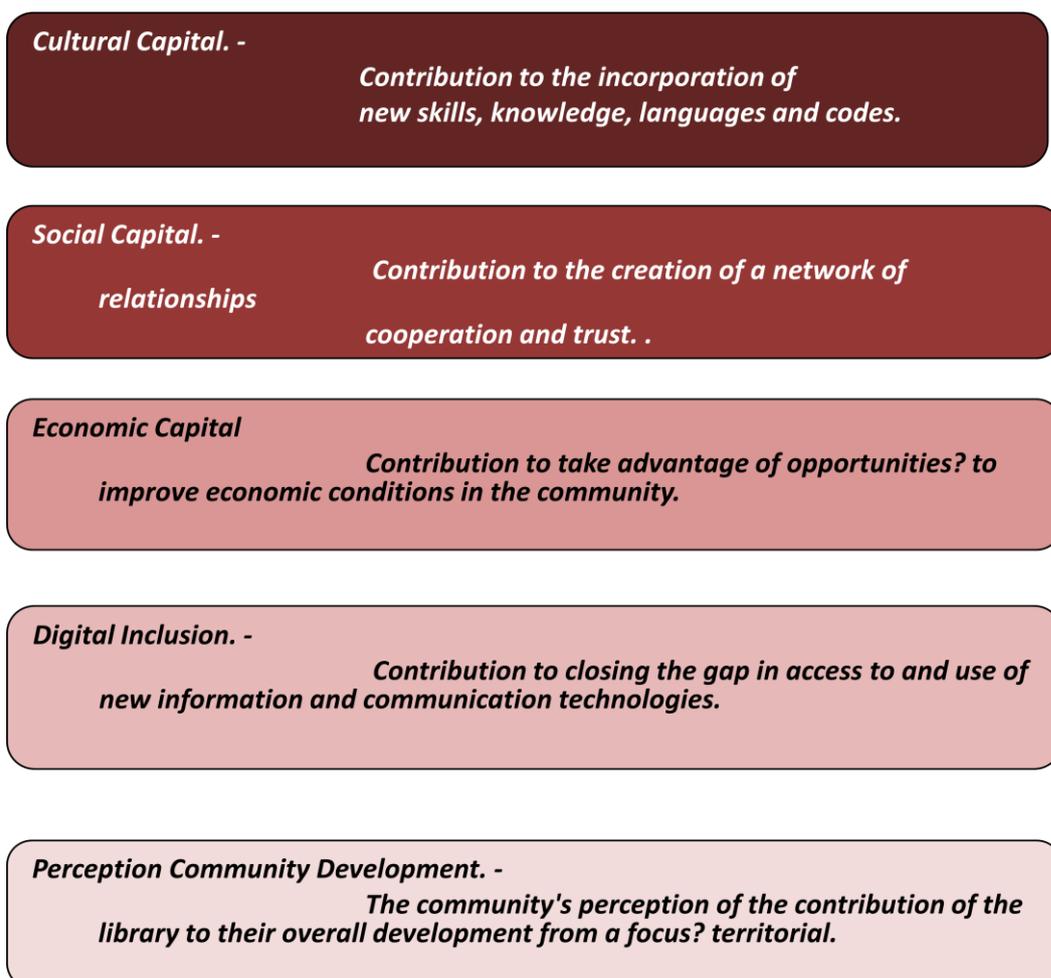
As shown in Figure 2, the proposed model provides an operationalization of variables associated with library resources, but rather to the actions undertaken by the Library about their community. In this sense, the library should take different actions that seek to increase:

- Community Development
- Human capital and cultural
- Social Capital
- Economic Capital
- Digital Inclusion

All this, in a process that seeks its articulation in equity of access to information and knowledge of the communities served by public libraries. Thus, the intervention seeks to develop an index of ownership and greater use of these variables that are expressed through concrete actions of the Library. In this manner, an index is operationalized these dimensions as follows:

Figure 3 Dimensions of Impact

Index dimensions



Thereby, is reducing the amplitude of dimensions to be evaluated, but extending the variables comprising these dimensions, allowing greater abstraction of data in the process of developing a common index and dimension indexes.

Another interesting factor of this model is that it incorporates a cross territorial dimension, ie it incorporates traditional territorial variables Rural - Urban, but also added insulation characteristics of these territories, thus can exist in isolation Critical Urban areas in Chile , reducing their access to different services and thus affects the use and social practices of the community.

Figure 4 Stages of construction

Index Construction Stages

Step 1: Standardization of the variables

- Were recoded to values between 0 and 1
- Ordinal variables were recoded scalar scalar values between 0 and 1
- New indicators were constructed from variables

Step 2: Creating Indexes for dimension

- Rates were calculated per dimension from the sum of variables, weighting more value those more significant

Step 3: Create the Final Index

- $(\text{Digital Inclusion} + \text{Cultural Capital} + \text{Capital Social} + \text{Economic Capitalisation}) (0.8) + \text{Perception of community development} (0.2) = \text{ICBPDFL}$

From this perspective, the index developed on a scale of 0-1 gives us the following results:

Table 2 Index of commune low or no insulation⁶

Commune	Region	Cultural Capital Index	Social Capital Index	Economic Capital Index	Digital Inclusion Index	Perception Community Development Index	ICBPDL
1.-La Placilla	V	0,479	0,645	0,340	0,544	0,741	0,550
2.- Peñaflor	RM	0,436	0,509	0,360	0,513	0,715	0,507
3.-San Carlos	VIII	0,307	0,389	0,286	0,575	0,582	0,427
4.- Chillán	VIII	0,331	0,374	0,214	0,478	0,693	0,418
5.-Iquique	I	0,392	0,472	0,160	0,426	0,586	0,407
6.-Olmué	V	0,303	0,443	0,218	0,449	0,599	0,402
7.-Peñalolén	RM	0,275	0,280	0,296	0,570	0,552	0,395
8.-Renca	RM	0,326	0,264	0,216	0,433	0,576	0,363
9.-Puerto Montt	X	0,282	0,346	0,187	0,278	0,671	0,353
10.-San Felipe	V	0,282	0,428	0,175	0,266	0,601	0,350
11.-San Antonio	V	0,305	0,369	0,138	0,308	0,556	0,335
12.- Concepción	VIII	0,249	0,321	0,211	0,396	0,471	0,329
13.-Villa Alemana	V	0,190	0,316	0,247	0,222	0,541	0,303

⁶ Index Data shown were taken during 2011. Currently working on a mixture of models that allow for correlations between resources available in the library and the impacts achieved, joining other new dimensions mentioned below.

Table 3 Average for insulation type ICBPDL⁷

Isolation Level	Cultural Capital Index	Social Capital Index	Economic Capital Index	Digital Inclusion Index	Perception Community Development Index	ICBPDL
<i>Low - no</i>	0,288	0,337	0,203	0,383	0,598	0,362
<i>Medium</i>	0,330	0,374	0,226	0,436	0,594	0,392
<i>High - critical</i>	0,364	0,385	0,243	0,437	0,641	0,414
Total	0,318	0,359	0,219	0,412	0,606	0,383

In Table 2 we can see that the Public Library of the Placilla commune, is the one that has a high impact on contribution to local development, presenting the highest value for almost all the index, in the libraries with little or no insulation, the only exception is to economic capitalization. In reviewing the average isolation index by type in Table 3, the dimension that has a greater contribution is the perception of users regarding community development, while the lowest is the economic capitalization. In the same way, we can see that the greatest impact is in libraries that are critical in isolation. Which has a correlate with management actions undertaken in the Public Library, while investment in human resources and training.

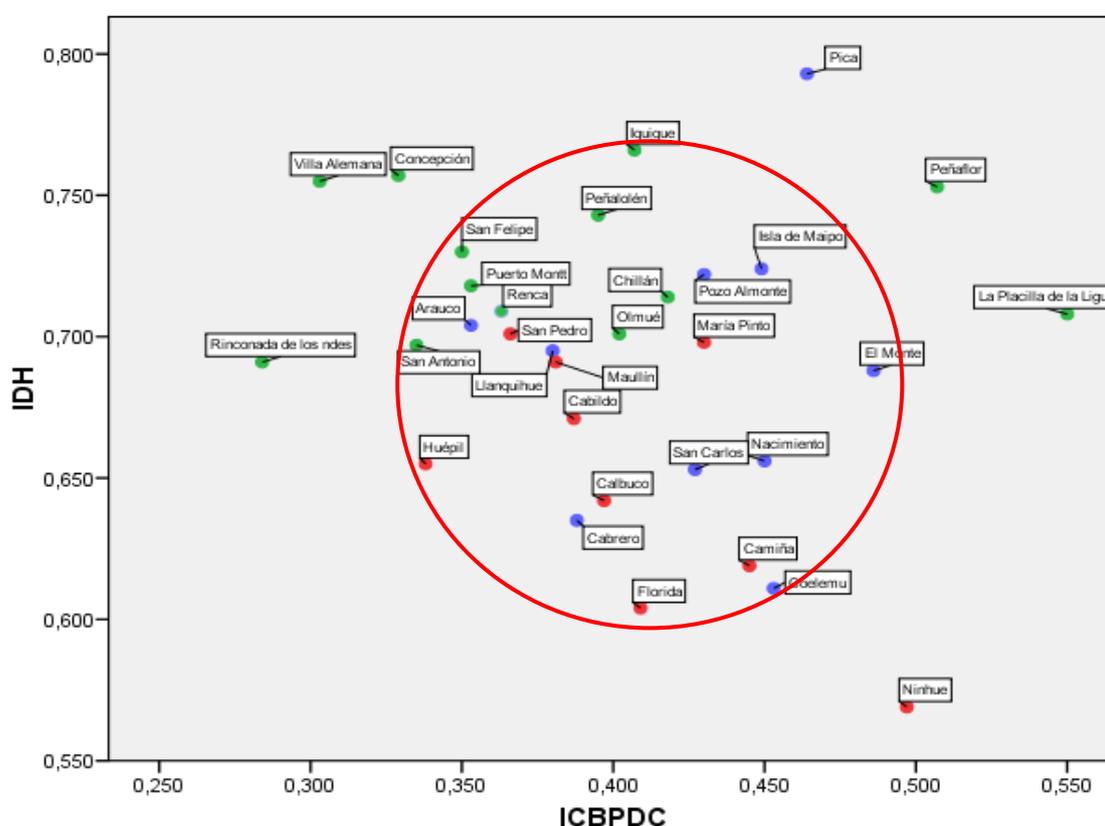
Table 4 ICBPDL by type of financing for BP

Type Library	Isolation Level	Cultural Capital Index	Social Capital Index	Economic Capital Index	Digital Inclusion Index	Perception Community Development Index	ICBPDL
<i>Private Financing</i>	<i>Low - no</i>	0,247	0,114	0,098	0,044	0,501	0,201
	<i>Medium</i>	0,214	0,194	0,218	0,110	0,603	0,268
<i>National Public Library System</i>	<i>Low - no</i>	0,407	0,321	0,397	0,230	0,609	0,393
	<i>Medium</i>	0,478	0,354	0,406	0,240	0,597	0,415
	<i>High - critical</i>	0,421	0,360	0,375	0,236	0,637	0,406

Moreover, Table 4 shows a comparison with a control group associated with libraries of private financing that are not part of the National System of Public Libraries, is interesting here to verify that the contribution of system libraries is greater than the other. Tending libraries in low or no insulation level 0,201 for private funding, while those belonging to the National System of Public Libraries have a 0.393. Also in the case of libraries that are in population means isolation levels, we owned 0,268 for and 0,415 private funding for belonging to SNBP. Finally is the SNBP alone has presence in areas with critical isolation.

⁷ ICBPDL: Contribution Index of Public Library Local Development

Graph 2 ICBPDL for HDI



Looking at Graph 2, we can establish that much of the public libraries are at the center of the quadrant in the ICBPDL values ranging from 0.350 to 500, while the average HDI of the commune is 0.600 to 0.770. The Library Ninhue commune, is the only one that has a similarity in both values, situated between the values from 0.500 to 0.550.

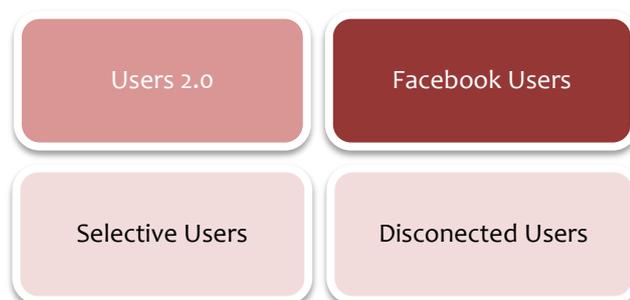
1.2.1. - Construction of typologies from these models

1.2.1.1-Type Digital Inclusion

One of the strengths of the model shown in Figure 2, is that it allows users typologies beyond the demographic profiles, since the used dimensions allow us typification according to their passivity or activity, consumption and production that have the users in these dimensions, for example with respect to users who use digital media can typification into four types:

- Users2.0: Users who have Facebook, other personal page and also belong to virtual communities. In typology 2009 this group also has Fotolog account and Blogs.
- Facebook Users: Users who only have Facebook, so more linked to personal social networks.
- Selective Users: Users who opt to specific services, with other staff besides Facebook page. The typology of this measurement also links such membership user virtual communities.
- Disconnected Users: Users who do not have any services 2.0 or participate in virtual communities.

Figure 4 Types of Users



From the analysis of the behavior of these variables, significant correlations were found that allowed their grouping. Thereafter according to the factorial scores obtained in each case: The data show a significant increase in the percentage of users 2.0 (from 12.8% in 2011 to 26, 3% in 2012) and selective users (6.2% in 2011 and 14.4% in 2012). Facebook users, meanwhile, fell by almost twenty percentage points. It is significant to note also the decrease of disconnected users, those who have no service 2.0 and not participating in communities, falling from 23.7% in 2009 to 14.5% in 2011 and 10.6% in 2012.

These data reveal, first, greater inclusion of public library users in virtual services associated with the Social Web, decreasing notably those who remain outside these possibilities. Second, the deregistration of Facebook users (who only participate in that platform) accompanied by increased user types 2.0 user selective expansion realizes in offering web platforms and social tools available as well as also the knowledge that users have of them.

As the user knows the tools available and implemented in their own reality, it is becoming in a multi-user that is appropriating tools of the social web for use in different areas of life. So, after the explosive growth in Chile registered Facebook records in recent years, users have come to know other tools that enhance the contribution of the social web for your life thus become users or selective users 2.0.

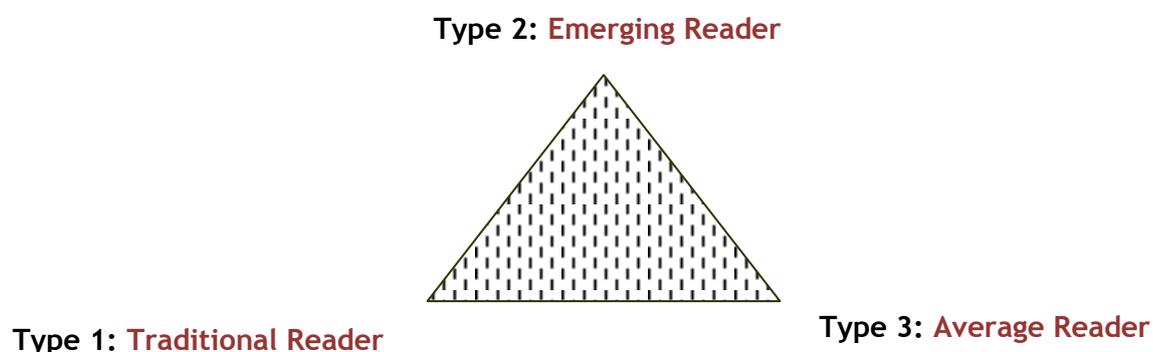
Another factor that has a bearing on this point is about using the cell phone as an access point to the Internet. Due to the design, connection type and mode of use, cell phones and tablets are very conducive for use in social network participation, as they allow fast queries and postings more instant. This usage, which as seen has increased sharply since 2011, may explain why many users that previously occupied today have Facebook accounts in other platforms linked to Internet use from mobile phones (Twitter, Google+, Tumblr, Pinterest, Instagr. am, Flickr, etc.).

1.2.1.2. - Typology by type of reader

In the case of reading, typologies were constructed based on the similarities of the cases presented in terms of the frequency of reading formats and motives. The variables that were selected after factor analysis are:

- Frequency of Internet use
- Frequency of reading format: Websites, blogs or photoblogs, daily paper, digital magazines and digital newspapers
- Frequency of reading motivation: To be informed, to learn new things, for fun.

Figure 5 Triangulation Types of readers



1.2.1.3. - Demographic characterization of the types of readers / as

The type of "traditional reader" and type "" emergent reader "relate mainly to women. By contrast the kind of "average reader" is mostly made up of men.

In terms of age range, type of "traditional reader" is clearly associated with the presence of adults and older adults. By contrast, in the case of the type of "emergent reader" are mainly in adolescents and young adults, while the "average reader" age ranges depicted are adults (37.3%) and young (33.9%).

The highest percentage of the type of "traditional reader" are the workers (32.3%) and unemployed or retired (23.8%). With regard to educational level, which appear with more presence are those who have maintained their schooling "Up to 12 years" (62.2%). At some distance the second rate, "Over 12 years" of schooling with 27.2%.

For the type of "average reader", the main representation is composed of students and workers (46.6% and 39% respectively). On the other hand type has the highest educational levels and that the highest percentage is found in the "Over 12 years" of schooling (56.8%).

Finally, if the type of "emergent reader" are clearly the students (72.9%). Far behind is a second group composed of workers (20.3%).

a) Types of Reader by reading format. The type "traditional reader" reads, such mainly on paper. By contrast, the usual format of "emergent reader" is the digital media. This does not mean, as shown in Graph. Reading "Daily paper" and "paper Magazines" is higher than that of these same digital formats. Halfway between both the type of "average reader" paper combines with the digital medium. It rather appears to maintain a clear preference for the first type of support.

b) Types of Reader as motivation. The main motivation of the kind of "traditional reader" to read is "To be informed" (83%), with the lowest category would be "to entertain" (63%). What would account for the "traditional reader", the reading is primarily a functional activity. An interpretation that is claimed to observe that the second motivation with the highest percentage is "Learning new things" (75%).

Reading also takes primarily functional in nature in the case of such "emergent reader." It reads "For their studies or work" (81.4%). In fact, the category with the lowest percentage corresponds to the "To entertain" (54.2%).

c) Frequency of reading. One of the characteristics on which is based the construction of three type raised, is the frequency of reading. Reading is, a daily activity for almost 65% of the type of "average reader" and to about 50% of the type of "traditional reader." By contrast, in the case of "emergent reader" only 36% read daily. In fact almost 20% of this type of reader notes that "never or hardly ever read."

d) Use of Internet. Internet use appears as other relevant variable when the three types of readers established in the study. There is a clear difference between the frequency of Internet use among the type of "traditional reader" and type "emergent reader" and "average reader".

e) Preferences for reading topics. The importance of reviewing the preferences for specific subject areas and topics of reading, is developed tastes deepen the types of readers / as and how they connect these features with previously raised.

The usefulness of this type of tipologies lies in the input of information to improve the management of libraries and therefore their impacts let us most acutely directing media campaigns, and offers services to the community.

However, this model also has some weaknesses that are expressed primarily in the variables considered for implementation, for example the latter model did not consider the objective aspects of the Libraries, as its infrastructure and skills of librarians , from this point of view not possible to perform an exercise of correlation between variables to identify if those more infrastructure Public Libraries have a better performance of the index. Therefore it is necessary to return variables such complejizar first model for the analysis of the data obtained.

From this perspective it is necessary to reconsider the weights assigned to ICBPDL, for we must consider whether the actions of public libraries in the same way affects the outcome of these indicators.

In another area, it is necessary to clarify the definition about community in this type of indicators, since the community of the library must be determined by members who use it, because there could be confusion between the idea of nominal community and real community . In this sense, we face two interesting discussions in this paper highlight:

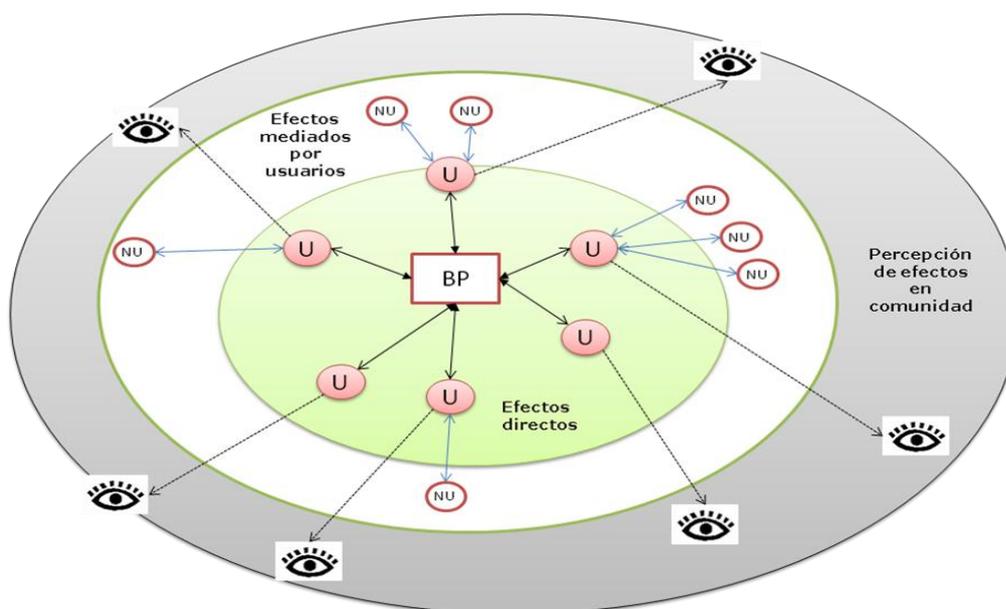
- **Direct and indirect impacts:** Model 2 presented in this article conducted an exercise that sought to quantify the direct impacts and indirect library users who were benefited by intermediation of the first, a growing number of people affected (see Figure 6).
- **Territorial Impact on the community:** In this type of impacts associated with discussion to implementing nominal community and real community, referring to the territorial scope the library effectively, ie territorial area of influence is limited and is enhanced by the implementation of loan points and mobile services, but its area of direct influence is limited. It is in this sense that we refer to nominal for example to total population of the commune and real is population territorially defined by the area influence of the library.

This issue is necessary to define and standardize the librarian task, since statistical comparisons are often made to the entire community population as indicators of library service coverage or coverage indicators bibliography. This can backfire and may be indicative of an indicator that can lead to an error to estimation. Because values of coverage the

population served by the library are often low in relation to the total population, there are also 3 books per inhabitant can generate a problem of warehousing in small libraries.

Definitely a work to be reviewed in greater depth, since one can not lose sight of the territory in which they develop Library actions, therefore having greater precision in the estimation of these territories and their values, adds attributes to a better measurement tool these realities.

Figure 6 Areas influenced Librarian Impact



From Figure 6, it appears that the actions of the Public Library should have a direct influence on its users, are direct effects, but these users turn mediate indirect effects to the community, therefore have a representation of the Public Library and its work. In this context of delimitation of areas of influence is interesting to think of the library as a social space, where the community is located and engaged, but also in a place that uses the local territory, through a variety of activities that are perceived by the community.

Table 5 Symbolism Figure 6

Symbolism	Meaning
BP	Public Library
U	Users
NU	Non Users
Ojo	Community Perception

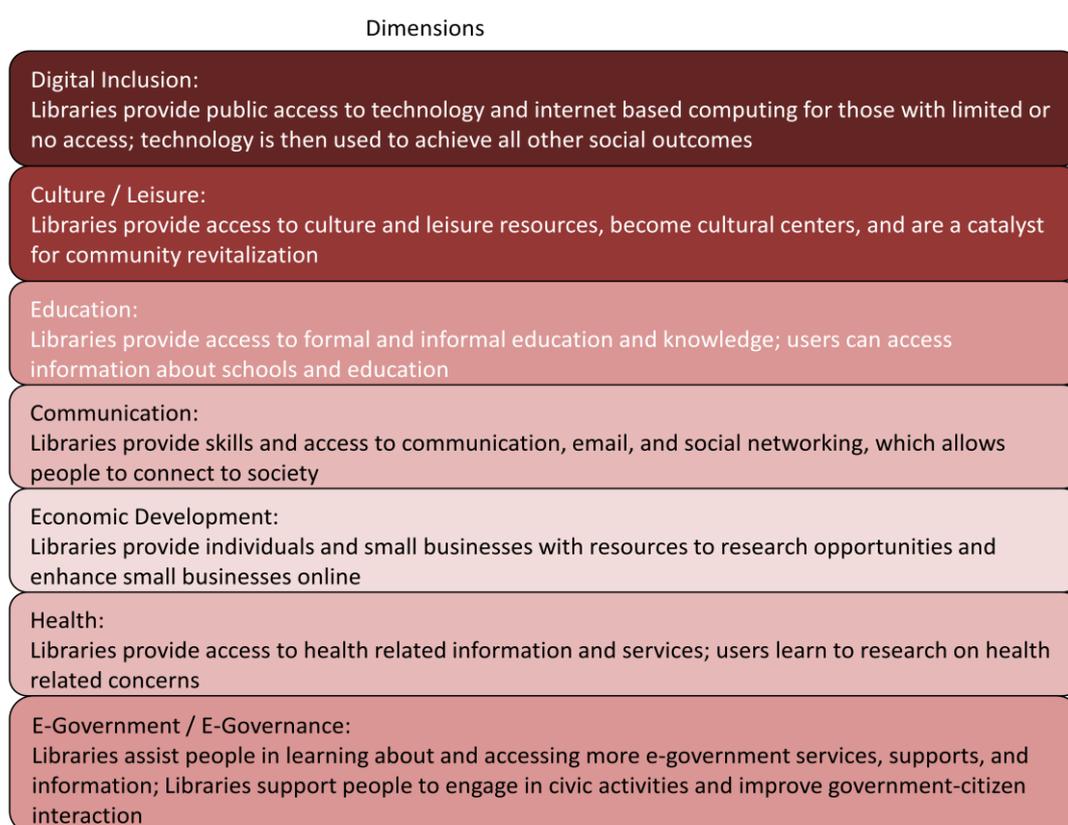
3. - Other considerations

In another context and from discussions generated by the Bill and Melinda Gates Foundation through their program Global Libraries, have been discussed a number of dimensions of impact taken from the experience of the countries that participate in this program, through a series of consulting and meeting, to seeking to define different areas of influence of librarian work, in a program of this magnitude.

In these discussions are incorporated dimensions associated with Health, in the context of African countries where digital library services have a major information work in this area. Which is not similar to the case of Chile.

This discussion leads us to think in new dimensions of analysis that allow greater and more inclusive discussion of library work to deal more accurate evaluation. Undoubtedly, so far we have identified common variables in Figure 7.

Figure 7 Some of the dimensions discussed in the Global Libraries Program



As we can see in Table 6, there is a composition of dimensions, therefore exercise is not only associated with creating a new analytical dimension hierarchy, but also to a redefinition of what it covers each. That is, we redefine its scope.

Table 6 shows that the only one that could not be integrated is the health dimension, since in the Chilean state's institutional structure, this type of information is part of E-government.

The scale consists of the binomial Culture / Leisure also is questionable from the perspective that as has been glimpsed throughout this paper, is that culture is seen as a vehicle for development and not exclusively as an entertainment vehicle. Because this perspective that embodies the diversity of local identities that are linked to the Public Library.

Table 6 Comparison of Dimensions Analysis

New Dimensions GL ⁸	Dimensions Tested SNBP
Digital Inclusion	Digital Inclusion
Culture / Leisure	Cultural Capital
Education	Cultural Capital
Communication	Social Capital
Economic Development	Economic Capital
Health	-----
Electronic Government	Community Development

4. - A Way of Conclusion

In this process and definition of variables and common metrics left out a number of areas and dimensions addressed by other programs of Libraries in the World, as in Africa, Europe, Asia or Oceania.

In many of the countries of these continents, there are agreements or exploration on cultural statistics and public libraries around that are interesting to see, as the Unesco Statistical Framework, the Andrés Bello Convention and others. In each of these frameworks we explore the identification of areas and statistical domains for each of the countries, reducing the library mostly the domain of the publishing industry or area of heritage, excluded it from cultural activities as a social space or economic , as a historical place and relationally, heterogeneous that today is able to work in a multicultural, cross to socioeconomic barriers, sociodemographic or ethnically diverse. This is where we must generate measurement instruments that make visible this expertise and impact.

It is extremely complex to think of a common statistical framework or a model elastic enough to measure and compare data in the world. However, it is necessary to carry out such measures, to make visible the work of the Library in the international public policy .

Today, we can see the statistics of Libraries under the domain of the cultural industry and variables associated with consumption rather than production. We can see that the impact studies seek to establish that the Libraries are positive development engines, but without concrete definitions that allow us to measure them in time and with comparable results to different locations.

⁸ GL: Global Libraries

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