
**AN ECONOMIC VALUATION OF MARIKINA CITY LIBRARY
USING REVEALED PREFERENCE METHODS**

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Abstract

To address the increasing demand for public libraries to redefine their values and justify their existence in this Digital Age, this study focused on one of the public libraries in the Philippines, the Marikina City Library (MCL) and the estimation of its Total Economic Value (TEV). The TEV of MCL was estimated using an economic-value measurement model that was adapted based on Revealed Preference Theory, which asserts that a person's preferences can be deduced from his/her behavior and actual choices.

Keywords: public libraries, Marikina City Library, total economic value, economic valuation

Introduction

Public libraries have been defined in different ways. Considering standard compositional characteristic, public libraries are physical and virtual spaces housing traditional and modern resources in different formats which are free from any kind of censorship and pressure (International Federation of Library Association and Institutions [IFLA] & United Nations Educational, Scientific and Cultural Organization [UNESCO], 1994). As to costs and clients, public libraries are collections of free resources and services for all community members regardless of age, sex, physical appearance and condition, skill and ability, talent, intellect, level of education, social status, religion and personal beliefs (IFLA & UNESCO, 1994; Maarno, 2014; Reitz, 2014). In terms of support system and purpose, public libraries are publicly funded services, wholly or in part, created to empower citizens and to make them active members and leaders of the society (Certified Public Library Administrator [CPLA], 2008; IFLA & UNESCO, 1994; Reading & Writing Foundation, 2014).

In consideration of societal role, public libraries were regarded as people's university by Alvin Johnson (1938) in his book, *The Public Library—a People's University*. Six decades after, IFLA (1994) in partnership with UNESCO (1994), called public library as "local gateway to knowledge" (para. 2), "local center of information" (para. 5) and, "living force for education, culture and information" (para. 3). As society evolves, new labels emerge.

In the 21st Century, public libraries are called "community centers" (Vinjamuri, 2013, para. 2), "technology hub" (Pew Internet and American Life Project, 2013, para. 2; Zickuhr, Rainie, Purcell, & Duggan, 2013), "e-government access point" (Jaeger & Fleischmann, 2007, p. 39) and "community anchors" (ALA, 2015) with its capability in bridging the gap between the rich and the poor through the provision of equal access to educational, technological, medical, financial, social, cultural, spiritual, governmental and non-governmental resources and services in the midst of high level of inequality, growth of Internet usage and the existence of five new realities as enumerated by Sandy K. Baruah (2007): (1) global economy; (2) continuous acceleration of the pace of change; (3) interconnected components of competitiveness; (4) vital role of private-public partnership; and (5) innovation as the only sustainable competitive.

Despite the significant role of public libraries in the new realities, several challenges that are direct and indirect effect of lack of funding exist: (1) aligning library services to the changing community needs; (2) providing access to content in all formats; (3) sustainability; and (4) leadership (Garmer, 2014). Overcoming these challenges requires not only the effort of library leaders but also the cooperation and support of community members and policymakers (Vinjamuri, 2013). However, technology and Internet are being carelessly viewed as replacement for librarians and libraries instead as tools of libraries for access expansion (Clark, 2014). The impact of this perception can be seen in the number of public libraries that are closing its branches, reducing library hours, eliminating programs or laying off staff members and becoming more dependent on volunteer groups.

Similarly, Philippine public libraries also encounter several issues such as insufficient or outdated resources, limited spaces and lack of IT facilities which can be related to lack of funding (Cruz, 2002; Mendoza & Martinez, 2000). Considering the list of registered libraries of the National Library of the Philippines as of May, 2015, there are a total of 1,128 libraries in the Philippines, composed of 1 regional library, 61 provincial libraries, 4 congressional libraries, 535 municipal libraries, and 427 barangay libraries. However, based on RA 7743 that mandates the creation and operation of a public library in every congressional district, city and municipality throughout the country, this number may not be enough. At present, the Philippines has 144 cities, 1,490 municipalities and 42,029 barangays (Philippine Statistics Authority [PSA], 2014). Thus, existing city and municipal libraries and barangay reading centers are significantly insufficient, at 69%, 35.9%, 1.1% respectively.

In Metro Manila, even the top three city libraries—Pasig City Library, Quezon City Public Library and Marikina City Library, experience issues in keeping pace with the digital society. In the case of the 2014 budget of Marikina City Library, only P600,000.00 was left from the total budget of P4.2M if you remove the librarians and staff's salaries. This remaining amount is the only allocation for its collection and services upgrade (Marikina City Library, 2013).

To address funding issues, many librarians resorted to donations and volunteerism which could not entirely secure the existence and development of public libraries (Anstice, 2015; Ninh, 2014; Nhung, 2011; Ocampo, 2009). To gain support, some started redefining and measuring the value of their public libraries (Hazinski, 2004). In the Philippines, several campaigns have been created to promote the value of libraries; however, the measurement of libraries' monetary value is still nonexistent. With economic valuation studies such as this, libraries will be able to effectively define and justify their worth in this Digital Age.

Money as the Common Measure of Value

As defined by David Henderson (2010), the value of a good or service is subjective. This entails high dependence of value on the person making the judgment. In the case of public libraries, their educational, social and cultural value may be clear enough for users and practitioners but may not be quite meaningful to all taxpayers and policymakers. Therefore, there is a need to redefine and measure the value of libraries in way more meaningful to all.

Money straightens out this inconvenience from subjectivity of value because money functions as a common measure of value; it is the common denominator in which relative values are expressed (Jevons, 1876). In the case of public libraries, expressing its value in monetary terms will result to the common understanding among users, non-users, librarians, community members, and government despite differences in backgrounds and priorities.

There are several methods developed by various economists and analysts to measure the value of non-market goods not being bought or sold as commodity in the market. These methods can be classified into two main categories: (1) direct or stated preference method; and, (2) indirect or revealed preference method (Johnson R., & Johnson G., 1990; Koetse, Brouwer, & Van Beukering, 2015). Direct method or stated preference method is a valuation done by creating a hypothetical scenario and directly asking users how much the value of a certain good or service for them. This means that the value is highly dependent on the direct estimate given by the users or consumers of the good or service. On the other hand, indirect or revealed preference obtains the value indirectly by observing one's preference as shown by their actual actions, decision or choices.

Until now, critical debate between the two main categories of methods still exist; but in this

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study, the researcher chose the Market Analogy Method or Market Price Method, an indirect or revealed preference method, considering the following factors: (1) nature of public libraries; (2) strengths and weaknesses of the stated preference method; and (3) strengths and weakness of the revealed preference method.

Public libraries are mixed public (social) goods by nature because they have both the characteristics of private and public goods (Goldberg, 2000). In this light, hypothetical scenario is not necessary due to the existence of the value of private good alternatives. This also becomes the strength of revealed preference method and the weakness of the stated preference method because the value of private good alternatives is a more accurate basis than the estimates of certain individuals which are inherently biased due to the effect of emotion, intellect, financial status, expectations, associations, time pressure, and desired image or reputation (King & Mazzotta, 2000). Similarly, the weakness of revealed preference method which traditionally does not measure non-use value is perceived by the researcher as more resolvable than biases. In this research, use values were estimated using private market equivalent of the resources and services in the library and non-use values were quantified using the actual pledges or donations in the library. Proponents of stated preference may argue this as inaccurate because some may want to give more than the actual donations. However, the researcher chose to measure at least the minimum value than risk having an over estimation (Shechter, Reiser, & Zaitsev, 1997; Champ, Bishop, Brown, & McCollum, 1997).

Theoretical and Conceptual Framework of the Study

The basic assumption in this study—choice reveals value, was adapted from an economic theory called revealed preference by Samuelson (1938) who asserted that one can deduce the individual's preferences, which expresses the value of the specific good, from the behavior or actual choices of that individual. This fundamental basis allowed the researcher to infer the value of a public library resources and services by looking into the choices made by community members.

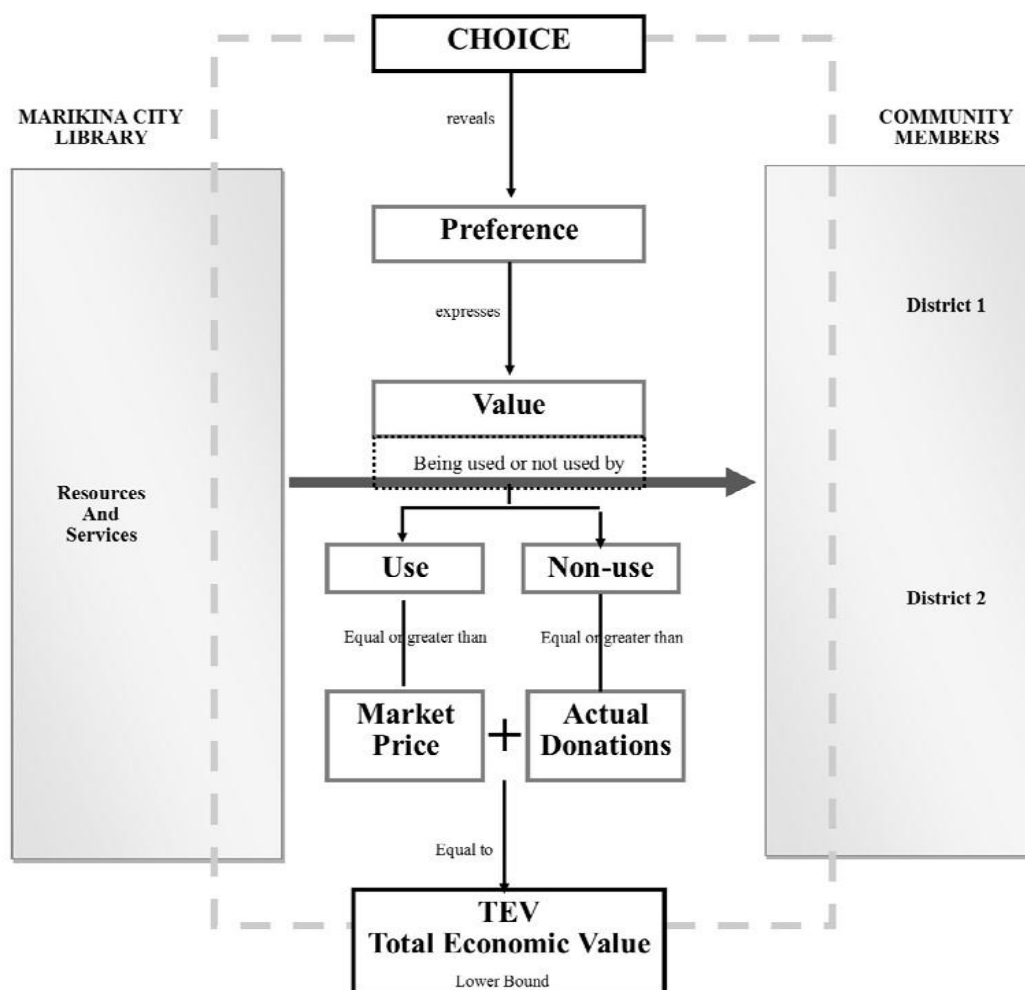


Figure 1. Total Economic Value (TEV) of Marikina City Library (MCL).

To further explain the value of public library resources and services used in the quantification process, this study utilized an economic valuation model shown in Figure 2 that was adapted from the model originally created for the valuation of ecosystem services when it mainstreamed in 1990s (Gomez-Baggethun, de Groot, Lomas, & Montes, 2009).

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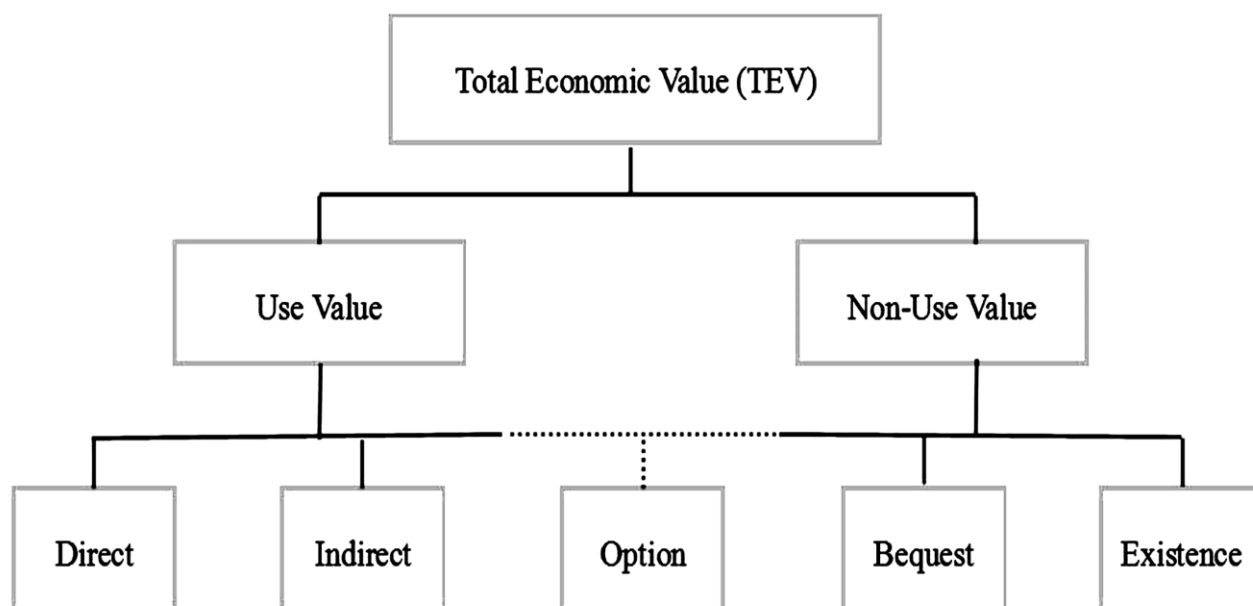


Figure 2. Total Economic Values (TEV). Adapted from “The Economic Value of Biodiversity,” by P. David and D. Moran, 1974, London: Earthscan Publications, p. 12.

As shown in Figure 2, the total economic value is composed of use and non-use values which are also subdivided into several types. Use value is composed of:

1. direct use value, benefit from directly consumed resources;
2. indirect use value, benefits from secondary or unintended functions; and,
3. option value, derived from one’s opportunity to use the resources and services at some point in the future (Pearce & Moran, 1994).

Non-use value, on the other hand is comprised of:

1. quasi-option value, expected value of stock knowledge relevant to the maximization of a certain asset;
2. bequest value, benefits arising from the thought of leaving something for the future generation; and,
3. existence value, satisfaction derived from simply knowing that something exists (Pearce & Moran, 1994).

Figure 2 also implies TEV as the summation of all use and non-use values or:

$$\text{TEV} = \text{UV} + \text{NUV} = (\text{DV} + \text{IDV} + \text{OV}) + (\text{QOV} + \text{BV} + \text{EV})$$

where, UV is the use value, NUV is the non-use value, DV is the direct value, IDV is the indirect value, OV is the option value, QOV is the quasi-option value, BV is the bequest value and EV is the existence value.

Objectives and Scope

To address the increasing demand for public libraries to redefine their values and justify their existence in this Digital Age, this study focused on one of the public libraries in the Philippines, Marikina City Library (MCL) and the estimation of its Total Economic Value (TEV) by recording the actual choices or behavior of MCL's users and donors and quantifying them using the market prices of equivalent resources and services in the library. The total of the use value and non-use value estimates is considered as the lower bound or the minimum TEV because the researcher acknowledges the possibility of some people giving and using more.

Specifically, the population being served by MCL was the subject of this study including all members of Marikina City community, from youth to adult belonging from all lines of work. Since the nature of the study requires the observation of real-time choices and actions of the library visitors, suitable sample frame is unavailable. In this light, the researcher can only use quota sampling in determining the qualified participants for the use-value estimation. With this, the observation on library visitors who are Marikina City residents started in May 20, 2015 and continued until May 29, 2015 when the quota proportional to the population for each district of Marikina City were filled. Similarly, quota sampling was also used in the identification of participant donors for Marikina who were struck by calamities which damaged some of their records, which made it impossible to have a suitable sample frame for non-use value estimation. With this, the researcher relied on recognizable donation labels on existing resources to identify donors who are qualified as participants. In addition, the donors and actual donations observed in this study were also limited to Marikina residents and were also in fixed proportion with the population of Marikina City districts.

Methodology

Research Instrument

The actual choices of MCL visitors and donors, who are Marikina residents, such as borrowing and donating books were identified using two research instruments: (1) MCL records; and (2) structured moderate participant observation—an observation done in a natural setting with the

researcher acting as a participant. The researcher focused on the resources and services used by the library visitors during the period of observation and the resources donated by Marikina residents as the basis of the estimation of the economic value of MCL.

To record actual donations and actual library resources and services used by the participants, the researcher used an observation form, strategically designed to maintain more structure, organization and consistency in the observation process. Specifically, the observation form for MCL visitors contains a list of information that the researcher needs to obtain and focus on during the observation schedule such as participant's district, MCL sections and the resources and services being used by the participant. In the case of donors, the observation form was designed to guide the researcher in identifying the donor's district and the kind of donation given: cash, check, goods, and services. With the observed usages and donations of the participants, the total economic value of MCL was estimated by assigning the lowest market prices of the private alternative resources.

Data Collection

The first part of data collection was the acquisition of records with the MCL librarian before the actual data gathering for the supporting information regarding: (1) resources and services that Marikina City Library offers; (2) the records listing the donors, their donations and date of donation; and (3) the annual budget of MCL. The information gathered about the resources and services offered by MCL were used as the categories that were observed and quantified in this research, whereas the donor list from MCL was used as basis in selecting participant donors. As a point of comparison of the estimated value from this study, the record of the annual budget of MCL was obtained by the researcher during the initial stage of data collection of this study.

With all the necessary information and records from MCL, the second part of the data collection was a structured, moderate participation observation. The researcher acted as one of the volunteers at MCL to record actual usages and donations of participants with the aid of predesigned observation forms. This was strategically applied aligned to the Revealed Preference Theory to assure that the data were the users' actual behavior in the library and not just what they recall that they did or what they expected to do. The observation and recording process by the researcher were guided by the list of categories of resources and services being offered by MCL.

For the non-use value quantification, researcher's primary sources were the donation records. These include the donors' names, addresses and the dates of donation. However, due to the incomplete donation records, the researcher also relied on recognizable or readable labels, stickers or stamps of donated books that still exist and are being circulated at MCL to obtain donation information before the year 2012. The observation process for both the actual usages of library visitors and actual donations continued until the quotas were filled. The study covered two working weeks of data gathering, from

May 19 which was spent for the gathering of MCL's record as assisted by MCL administrative staff and, from May 20 to May 29, 2015 which were spent for the structured, moderate participant observation of the library visitors.

Analysis of Data

In accordance with the objectives of the study, the data gathered from the records of donation and from structured, moderate participant observation were tabulated and assigned with the lowest market prices of the alternatives. In the process of assigning value to the actual resources used by library visitors and actual resources donated by donors, the researcher utilized local and international, bookstore sites, book price comparison sites, buy and sell websites, social networking sites posts, and personal sites and blogs. These online tools were strategically chosen to get the lowest secondhand prices of resources for more accurate and unbiased quantification of the resources. Also, actual transportation costs and shipping fees in acquiring resources were not considered in this study because of reasons below:

1. In the case of actual or physical world shopping, the customer's location and salary influences the transportation cost and transportation time cost, both of which were not investigated in this study.
2. In the case of online shopping, many company sellers have different shipping rates depending on the weight of resources, number of items ordered and location of the person making the order, all of which are factors not investigated in the study.
3. The primary focus of the researcher is to quantify the value of resources and services of MCL which at least define the lower bound of MCL's total economic value.

Using descriptive statistics, after the process of assigning market prices to the actual resources and services used and donated at MCL, mean was calculated. This average value was extrapolated based on the average number of MCL's visitors and donors in a year. Then, the calculation of the total economic value of MCL was followed by a cost-benefit analysis which was used by the researcher to analyze the economic value relative to the funding MCL receives. This process allowed the researcher to determine the monetary ratio of the cost invested by Marikina City and its residents and the benefits they get in return. From this, the researcher also analyzed the implication of the calculated economic value to MCL and its system, to Marikina City and its economy and its residents.

Results and Discussion

Usage and Donation of Resources at MCL

The summary of resources and services used by the library visitors in all sections of MCL during the observation period is shown in Table 1.

Table 1
Usage Percentage of MCL Resources and Services

MCL Sections	MCL Resources and Services	Districts 1 & 2 Usage	Districts 1 & 2 Usage %
Periodicals, Teen's, Recreational & Special Collections Section	Periodicals	64	16.67
	Teen's & Recreational	22	5.73
	Special Collections	5	1.30
	Space	18	4.69
Computer & Children's Section	Computers	16	4.17
	Children's Books	0	0.00
	Space	0	0.00
General & Filipiniana Section	Computer Science, Information & General Works	6	1.56
	Philosophy & Psychology	14	3.65
	Religion	3	0.78
	Social Sciences	20	5.21
	Language	2	0.52
	Science	23	5.99
	Technology	39	10.16
	Arts & Recreation	6	1.56
	Literature	6	1.56
	History & Geography	7	1.82
	Filipiniana	9	2.34
Space	104	27.08	
Law & Reference Section	Law & Reference	0	0.00
	Space	20	5.21
Total		384	100

MCL has a total of four sections which house eight types of resources, namely: Periodical, Teen's & Recreational, Special Collections, Computer, Children's, General, Filipiniana and Law & Reference. Among these eight resources, the biggest is the General Section which is composed of several books classified according to Dewey Decimal Classification (DDC) System.

Aside from the resources enumerated above, MCL also has computer areas and areas for reading and group discussions. These reading and discussion areas found in different sections and were labelled as space in this study because they satisfy the need of library users for space. Among all MCL's resources and services, space is the most utilized resource. As shown in Table 1, 4.69% of participant library visitors brought their own materials and spent several hours in a certain chair and desk in the Periodical, Teens, Recreational & Special Collection Section. In addition, 27.08% used the space in General & Filipiniana Section, while 5.21% stayed in the Law & Reference Section. These space usages summed up to 36.98% which positively implies MCL's indispensable role in providing

spaces conducive for studying. On the other hand, users bringing their own books may also negatively imply limited collection or inefficiency of the system for organization. Looking closely at the percentages of usage of MCL resources in Table 1, one can notice that the next highly utilized resources are periodicals, mainly broadsheets which are not even half of the total space usage percentage in merely 16.67%. Also, in terms of usage percentage, periodicals are followed by Technology resources (10.16%), Science (5.99%), Teens & Recreational (5.73%), Social Sciences (5.21%), and the rest including Computer, Philosophy and Psychology, History, Geography, Computer Science, etc. are below 5%. The reasons for the low usage percentage of the book resources were not investigated in this study but the behaviour of the users who brought their own materials implies four possible reasons:

1. The library does not have the resource users need.
2. The similar resources in the library were not the updated copy.
3. The users were not aware that the library has the resource.
4. The users can't retrieve or access the needed.

No matter what the cause is, these observed behaviors imply the need for some upgrades in collection organization, regular user need assessment, and regular marketing of MCL resources.

A different trend can be observed in the case of donations excluding periodicals and space because the former are subscribed and the latter is appropriated by Marikina LGU. As shown in Table 2, the top five resources are: Technology (22.39%); Children's books (19.85%); Filipiniana (18.32%); Teens and Recreational (12.21%); and Law and References (5.85%). Comparing the percentages in Table 2 with those in Table 1, Filipiniana, Children's books and Law and References are at the top in the former and at the bottom in the latter. The act of donors on purchasing resources on their own suggest a real need for those resources and the possible lack or complete unawareness of resource's existence in the library during the time of the need. Another highlight from the donation data is the consistency of Special Collection and Religion at the bottom and the plateau of Social Sciences, Computer Science, Philosophy & Psychology, Language, Arts & Recreation, Literature, History & Geography in the middle in both Tables 1 and 2. These figures can possibly mean: (1) low level of need for those resources; or (2) the existence of better alternatives. Either way, this reemphasized the need for regular user needs assessment, better collection organization and marketing of resources as mentioned earlier in the case of usage percentage.

Table 2
Donation Percentage of MCL Resources and Services

MCL Sections	MCL Resources and Services	Districts 1 & 2 Donation	Districts 1 & 2 Donation %
Periodicals, Teen's, Recreational & Special Collections Section	Periodicals	N/A	N/A
	Teen's & Recreational	48	12.21
	Special Collections	0	0.00
	Space	N/A	N/A
Computer & Children's Section	Computers	0	0.00
	Children's Books	78	19.85
	Space	N/A	N/A
General & Filipiniana Section	Computer Science, Information & General Works	12	3.05
	Philosophy & Psychology	12	3.05
	Religion	0	0.00
	Social Sciences	18	4.58
	Language	12	3.05
	Science	17	4.53
	Technology	88	22.39
	Arts & Recreation	10	2.54
	Literature	2	0.51
	History & Geography	1	0.25
	Filipiniana	72	18.32
Law & Reference Section	Space	N/A	N/A
	Law & Reference	23	5.85
Total		393	100.00

Total Economic Value (TEV)

For accuracy and bias eradication in quantification, the lowest secondhand market prices from local and international bookstore sites, book price comparison sites, buy and sell sites, social networking sites and personal blog sites were used. For cases wherein used market prices were not available, prices for the new copies were used. For out-of-print materials with general content, prices were derived from the average used market price of resources with similar content. For those out-of-print materials with unique content, photocopy price was utilized. For periodicals, subscription prices were used and were derived from the broadsheet and magazine sites. For spaces, average study area hourly rate in Metro Manila were used. Table 3 shows the summary of the computed use, non-use values and TEV of MCL.

Table 3
Total Economic Value (TEV) of MCL

USE VALUE	
UseValD1	P189,039.160
UseValD2	P224,452.220
UseValD1D2	P413,491.380
Sample Population (confidence level: 95%, confidence interval: 5)	384
AVE. USE VALUE (UseValD1D2 Sample Population)	P1,076.800
TOTAL USE VALUE (Ave. Use Value X Ave. MCL Users Per Day) Ave. MCL Users Per Day: 70 to 100 OR 20,160 to 28,800 / year)	P21,708.000 to P31,011,840.000
NON-USE VALUE	
NonUseValD1	P62,277.464
NonUseValD2	P112,346.234
NonUseValD1D2	P174,623.698
Sample Population (confidence level: 95%, confidence interval: 10)	96
AVE. NON-USE VALUE (NonUseValD1D2 Sample Population)	P1,818.997
TOTAL NON-USE VALUE (Ave. Non-Use Value X Ave. MCL Donors Per Year) Ave. MCL Donor per Year: 64 (Source: MCL 2012 to 2014 Logbook)	P116,415.808
TOTAL ECONOMIC VALUE (TEV)	
TOTAL USE VALUE + TOTAL NON-USE VALUE P21,708,288 + P116,415.808 = to P31,011,840 + P116,415.808 =	P21,824,703.81 to P31,128,255.80

As shown in Table 3, on the average, a Marikina resident library user will get a P1,076.80 benefit upon using the library. In terms of non-use value one could get a total of P1,818.997 value. After extrapolation in a year with 288 working days for the average number of users and donors, TEV of MCL amounts to P21,824,703.81. Comparing this estimated value to the 2014 budget of Marikina which amounted to P4,244,797.96, the researcher determined the benefit-cost ratio of MCL investment. Specifically, it was estimated that for every peso invested in MCL, Marikina City and its residents get P5.14 in return in the form of intangible use and non-use values as shown in Figure 3. With this, discontinuing investment will also mean a total loss of P17,579,905.85 economic benefit for Marikina City.

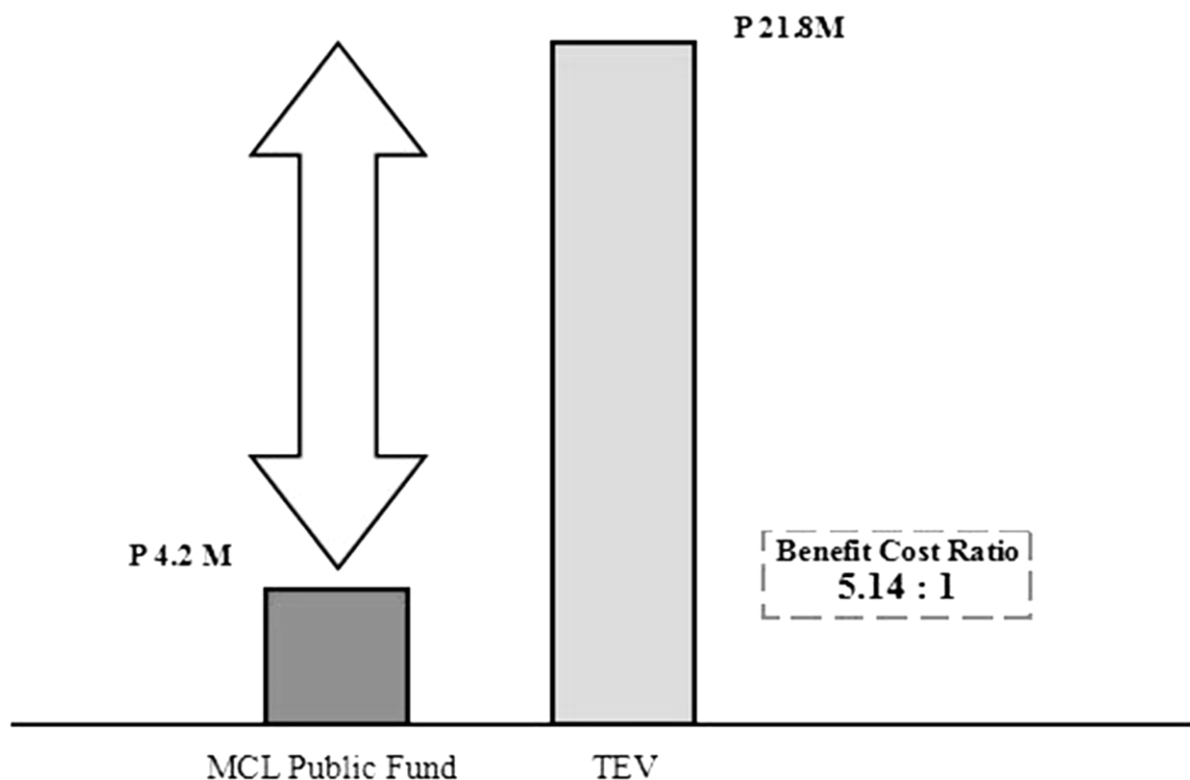


Figure 3. Benefit-cost ratio of MCL.

Conclusion

Based on the quantified value of MCL—P21,824,703.81 and the P5.14 return for every peso of investment, the researcher concludes that it is definitely worth it to invest in a public library such as MCL. The computed value in this study implies a significant contribution of MCL in the economic aspect of Marikina City in the form of use and non-use value that Marikina residents receive. However, the imbalance in usage percentages of MCL resources implies the need for MCL librarians and staff to further assess the needs of their Marikina residents, to maintain the organization of their collection for ease of access and to market their resources for more awareness. Therefore, although MCL significantly contributes to the economy of Marikina City, it can still generate more value with the consistent effort of librarians and continuous support of its community members and leaders.

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