

An Economic Valuation of the Quezon City Public Library – Main: A Mixed Methods Approach on a Total Economic Value Framework

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Abstract:

This study employed both a Contingent Valuation Method and a Market Analogy Method as economic valuation tools in determining Non-Use Value and Use Value, respectively, of the Quezon City Public Library – Main Branch.

Contingent Valuation Method, measuring the Non-Use Value for Non-Users of the library, involves the creation of hypothetical scenarios and asking respondents to state their a) willingness to pay (WTP) for a good or service as to be able to access it, and b) willingness to accept (WTA) compensation in exchange of not being able to access a good or service anymore, both payable through public taxation.

Data revealed that, in general, Quezon City Residents are appreciative of the public library and are more than willing to support it with the patrons Willing to Pay and Willing to Accept at least a tenfold of the baseline value.

Market Analogy Method, measuring the Use Value of the Library Users, involves determining the private market value of the public goods being provided by the library. A primary value was determined thru the combination of the total average value per user of the library as an information source, as an eGovernment service provider, and as a Computer and Internet Service provider. An added value of was determined for QCPL as a Place --- for meetings, group works, and self-study among others. Results imply that for every \$1.00 invested in the library approximately \$1.04 is returned to the users in goods and services.

As a whole, the researchers conclude that, although QCPL suffers from low use value utilization, there is a great potential from the non-users, with their high valuation, to abet the low user population of the library.

Keywords: Public Libraries, Economic Valuation, Contingent Valuation Method, Market Analogy Method

Introduction

IFLA envisions public libraries to be nodes connecting the local learning setting with the global resources of information and knowledge, and thus must be allowed to play a role of fundamental importance in the development of future systems of lifelong learning. With today's information age, with its vast wealth of new information coupled with new inventions, never are we much more in need to be informed. However, IFLA (2001) also affirms that "legislation and sustained funding" (p.13) is necessary to maintain the level of service required to fulfill their functions public libraries" (p.13).

In the Philippines, even the national library of the Philippines, foremost of the public libraries in the country, is not safe from budget issues. While then director Mendoza herself reinforces that public libraries "need money, and in proportion to their funding ordinarily depends on their quality of materials and often their quality of service," insufficient budget has been one major issue she encountered during her term (Mendoza & Martinez, 2000). Despite Mendoza's efforts to enhance their budget from roughly \$0.5million in 1994 to around \$3.6million, it actually dropped to \$2.2million in 1999. Sufficient funding would have been vital in solving the other issues she had encountered such as public library closures, lack of rural libraries, termite infestations, lack of space, and irregular distribution of books, among other things.

It is also quite alarming that several studies about public libraries further reinforce the financial issues that they are facing. Luz (2014) in his thesis on disaster preparedness of the Manila City Library observed that the "roof of the library leaks whenever there are heavy rainfalls"; that "the building is old," and that "the OIC said that there are not enough available funds for renovation." Generao (2008), in his study of the effectiveness of programs and activities by the library's programs and activities for its promotion, concluded that the programs and activities were "not in their top shape."

Quezon City Public Library (QCPL), situated in the most populous city in the country (2010 Census), it's main library located in the Quezon City Hall Compound, is not an exemption to budgetary issues. Aman (2014), in his thesis, shared a thought from a librarian of new collections depending on the existence of budget and the support of funding. Diaz (2013), while studying the possibility of collaboration from QCPL also reported that "library staff in the main branch of QCPL agreed that the library itself lacks resources." Ignacio (2014), studying the social relevance of the San Pablo City Public Library, also reported that that the SCPL and certain QCPL branches suffer from dilemmas such as lack of financial support, limited space, and outdated facilities, among other things.

Pasamba (2009) purports that library closures, and accordingly budget cuts, happens because the librarians have not assessed the "real value" of the library and its services and therefore has nothing to show the city administrators. What better way to show value to the city administrators but through an empirical financial valuation. The Americans for Libraries say:

“talking dollars make sense” (2007). There is a need for “convincing arguments that link library facts and figures to community development and social and economic prosperity.”

Librarians and regular patrons may have solid grasp on the intrinsic educational, social, and cultural importance of public libraries but, to reiterate, “Talking dollars make sense” (2007). Talking dollars means to speak about Economic Value. Economic valuation of public libraries necessitates specific methods as it offers non-market goods, products and services not being bought or sold as a commodity in the market but are instead provided free to patrons. These valuation methods can be categorized into two main classifications: direct or stated preference method, and indirect or revealed preference method (Johnson R. & Johnson G., 1990).

The Direct or Stated Preference Method asks users to put a value on a particular good or service according to their own estimate. It is subdivided into the contingent choice method, conjoint analysis method, and the contingent valuation method. Contingent Valuation Method is the most often used of the three.

CVM has seen multiple usages in library valuations worldwide. The State of Florida Library (Griffiths et al., 2004), the Seattle Public Library (Berks & Associates, 2005), and the British Library (Tessler, 2013) all utilized CVM as their valuation framework. The studies above, however, have relatively outlined its own thoughts on the limitations and disadvantages of its methodologies. The study has included measuring “willingness to pay” to determine benefits despite they noting that it may induce bias as “respondents feel that asking questions about charges may be a precursor to an actual introduction of (or increase in).” A sentiment often supported by critics of the method (Carson et al., 2000; Blinder, 1991; Aabø, 2009). It is from these studies that prompted the researcher to seek out a supporting methodology for CVM

Indirect or Revealed Preference Method obtains the value of particular good or service by observing the actual responses or actual actions of users in their choice of products and services. This provides an indirect estimate of the value of the good or service through a surrogate market. It is subdivided into Market Analogy Method, Trade-Off Method, Intermediate Good Method, Asset Valuation Method, Replacement Cost Method, Preventative or Defensive Expenditure Method, and Delphi Method. Of the seven, the Market Analogy Method (MAM) is the most often used. MAM is associated mainly with public goods and services, as with public libraries.

Dr. Pearl Kamer (2006) of the Northport-East Northport Public Library, Nicole Steffen (2009) of the Colorado Libraries, and Nehemias Pasamba (2009) of the Mission College in Thailand have advocated the use of MAM in economic valuation. Using MAM would reduce, if not entirely prevent, the biases that may come up when asking users to evaluate public goods and services subjectively. Additionally, upon completing a market analogy table, or a value calculator, the economic valuation of the library can then be done repetitively with minimal effort. However, it has generally been accepted that, in general, it is not possible to measure non-use value through revealed preferences (Popp, 2010). Thus, despite the merits of disclosed preferences methods, specifically MAM, one will not be able to evaluate the total value, both use and non-use, with this alone.

Thus, considering the merits and the criticisms of both CVM and MAM, a combination of the two is determined to be a suitable concession over either of them alone. MAM would prevent valuation biases as there is no actual valuation involved on the side of the respondents. MAM’s inability to evaluate non-use value is resolved by pairing in CVM for the non-users.

Biases above are minimized thru carefully prepared questionnaires and data gathering methods.

Theoretical Framework and Conceptual Framework

Pearce and Moran initially proposed TEV as a model for the valuation of essential services (Gomez-Baggethun, de Groot, Lomas, & Montes, 2009). TEV, however, also applies to other non-market goods such as the public library and its products and services. As shown in Figure 1, TEV splits into Use Value, of which arises “from the actual use of a certain good,” and Non-Use Value, of which arises “without actual usage of a good.”

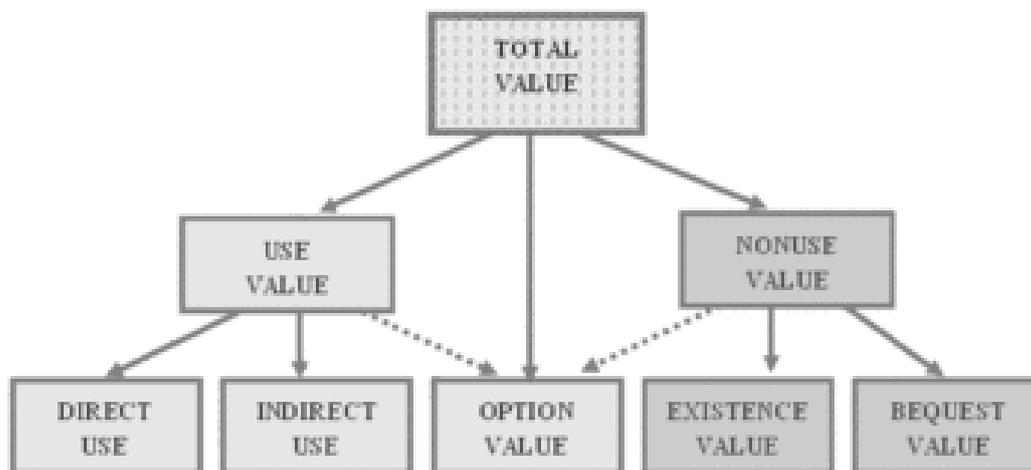
Use value is further subdivided into:

1. direct use value - actual uses of resources;
2. indirect use value - unintended benefits deriving from functions and services; and
3. option value - approximation of value obtained from option to use resources in a future date (Pearce & Moran, 1994).

Non-use value is further subdivided into:

1. option value - approximation of value in anticipation of future use;
2. bequest value - value accruing to any individual from the knowledge that others might benefit from a resource in the future; and
3. existence value - satisfaction derived from merely knowing that something exists (Pearce & Moran, 1994).

Fig 2 visualizes the framework for applying both MAM and CVM in Economic Evaluation of the QCPL as adapted from a TEV framework



. Figure 1. Total Economic Value

Source: Total economic value (2013)

Image from <http://www.eoearth.org/view/article/156666/>

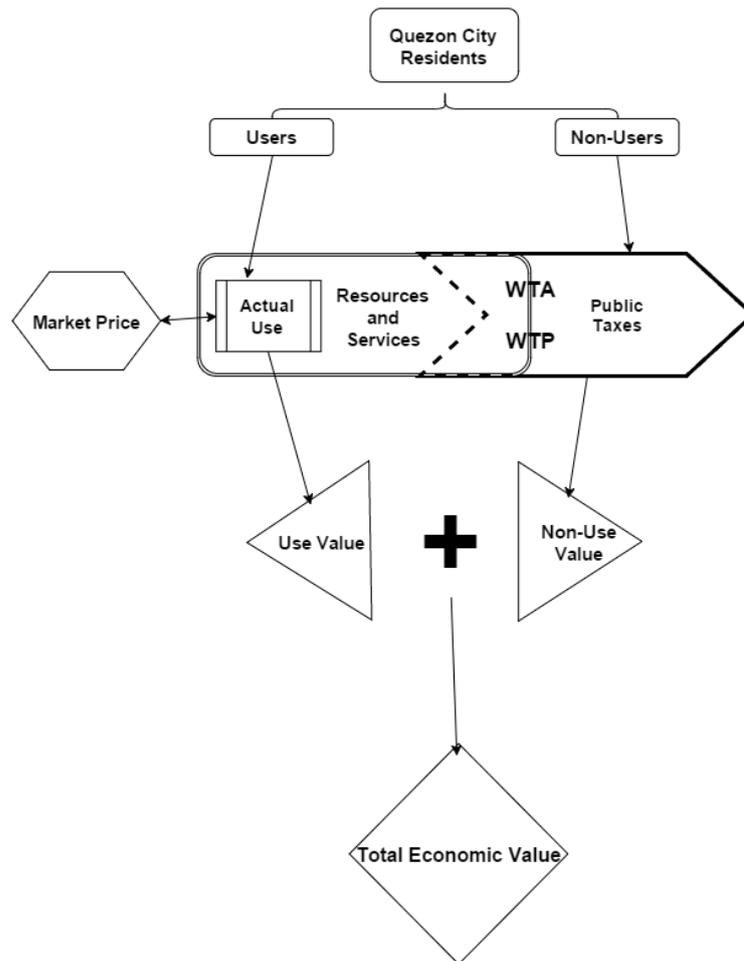


Figure 2. Total Economic Value of Quezon City Public Library

Revealed Preference Theory and Market Analogy Method

Revealed Preference Theory, with the underlying assumption of “choice, reveals value,” was Samuelson’s (1938) means of refining consumer theory, attempting to explain the purchasing behavior of individuals. Samuelson purports how the actual practice or actual choices of an individual can be grounds for inferring said individual’s preferences, thus expressing the value of individual goods for that individual.

Value of revealed preferred goods can then be inferred from a real market, as with the Market Analogy Method. MAM approximates the value of public goods based on the goods’ counterpart price in the private sector. MAM assigns the value of public goods and services to equate the average price of the same or similar goods as provided in the private market, such as a book from a public Library comparing to a bookstore counterpart.

Stated Preference Theory and Contingent Valuation Method

Stated Preference’s approach to nonmarket goods relies on answers to carefully worded survey questions. These answers, in the form of monetary amounts, ratings, or other indications of preference, are then scaled following an appropriate model of preference to yield a measure of value. (Brown, 2013)

An often used Stated Preference technique is the Contingent Valuation Method. CVM relies upon respondents’ answers to surveys asking their “Willingness To Pay” (WTP) for the

continued provision of a certain good or service, and their “Willingness To Accept” (WTA) compensation for the discontinuation of the same good or service.

Essential elements of the survey are:

Description Of The Good Being Value - identifying all valuable attributes of the good

Description Of Payment Vehicle - how the money will be paid, through direct fees and collections or through increased taxation, and

Description Of The Hypothetical Market. – who’ll provide and who’ll pay for the provision of a public good.

Objectives and Scope

Public libraries are funded by the government and private donors. Thus, these libraries operate in an environment of politics and complex forces, requiring them to show that they are contributing to the community. This study aims to provide an empirical analysis of the economic value of a library that can be a vital proof of rationale for requesting additional budget and can also help expose possible indications for a more efficient reallocation of funds. Increased funding, or improved reallocations, will enhance the resources and services being given to the library’s patrons. Furthermore, the resulting market analogy value table may serve as the basis for replicated valuations.

This study focused on the Quezon City Public Library - Main. Use value was considered and was adopted through Market Analogy Method based on private markets in the library’s surrounding area. Non-use value is regarded through Contingent Valuation Method. Costs used for calculating return on investment are solely composed of sunk costs based on the Financial Report Fiscal Year 2015. Resulting Use and Non-Use Value served as the minimum value of the public library as this study focused on direct use value and option and existence non-use value

Methodology

Research instrument

Questionnaires for Use Valuation invite users to delineate their actual usage of library resources and services. Respondents are requested to record the resources and services they used and the frequency or span of time.

Unstructured interviews and visual observation are used to determine the average price of resources and services in the private sector, as analogs for approximating use value of resources and services used.

Questionnaires for Non-Use Valuation invite the users to provide monetary value to specific public library resources and services as has been adapted from earlier studies (Tessler 2013; McClure and Bertot 2001)

Data collection

The Library’s cost is based on its financial statements and budget allocations. Questionnaires for user respondents were given out to library patrons to be filled up during their stay and collected upon exit. Only upon the collection of usage data was the market analogy collected. Private establishments in the vicinity of the library were interviewed to determine the market price of the same or similar products and services.

Non-user respondents’ data were gathered randomly among the three intercept locations: Quezon City Memorial Circle, Eton Centris, and Mega Q-Mart.

Analysis of Data

CVM of Library Non-Users

Demographics

Three locations, within a 2km radius from the library, were chosen as intercepts for Library Non-User respondents. The sites were selected to provide a broad range of socioeconomic backgrounds to reduce response bias regarding socioeconomic backgrounds.

Quezon City Memorial Circle, a public park, Eton Centris, a commercial compound and business hub, and Mega Q-Mart, a public market, were chosen to provide the most diverse socioeconomic background for respondents. 120 respondents were surveyed from each location, 60 of which were informed of the actual baseline value of how much of their taxes actually go to the public library's annual budget, and the other 60 were not reported, respectively, for a total of 360 respondents.

The Baseline value of \$0.34 has been determined by dividing the provided annual budget of QCPL of \$952,363 by the latest recorded population of Quezon City of 2,761,720.

Valuation of Non-Users Informed of Baseline Value

Willingness to Pay

Non-Users Informed of Baseline Value reported Willingness to Pay with a maximum value of \$323.66 and a minimum value of \$0.08. Reported WTP, with outliers, revealed a normalized value with arithmetic mean at n=180 of \$10.75, showing that respondents are willing to pay 3016.67% more than the baseline value. This considerable increase in their current payment amount shows that they value these services and are willing to ensure its sustenance, despite them actually not using the services. Their willingness to provide the library with continued funding is clearly indicated by their willingness to pay to support these services.

WTP values of x=97.10, x=126.52, and x=323.66 were determined as outliers thru a z-score test. Without the outliers, the new arithmetic mean at n=177 is \$7.84, a 2272.87% increase from the baseline value. This shows that the non-users, despite currently not actively using the library and its services, and being informed of the actual value they are paying for it, are willing to pay more to ensure the library's continued operations.

Willingness to Accept

Non-Users Uninformed of Baseline Value reported Willingness to Accept with a maximum value of \$593.44 and a minimum value of \$0.00. The zero-value resulted from respondents not willing to accept compensation, which, in theory, also denotes their unwillingness to forfeit services despite them not actively using it. With outliers, the reported WTAs' arithmetic mean at n=180 is 11.40, an increase of 3206.37% from the baseline value. This shows that respondents expect a much higher compensation compared to what they currently pay thru taxes.

Outliers were determined as x=124.56 and x=539.43, with new arithmetic mean with n=178 of 7.80, resulting in an increase of 2161% from the baseline value. Despite its huge difference from the 'with outlier percentage increase,' this is still a significant increase in the respondents expected compensation despite being informed of the baseline value.

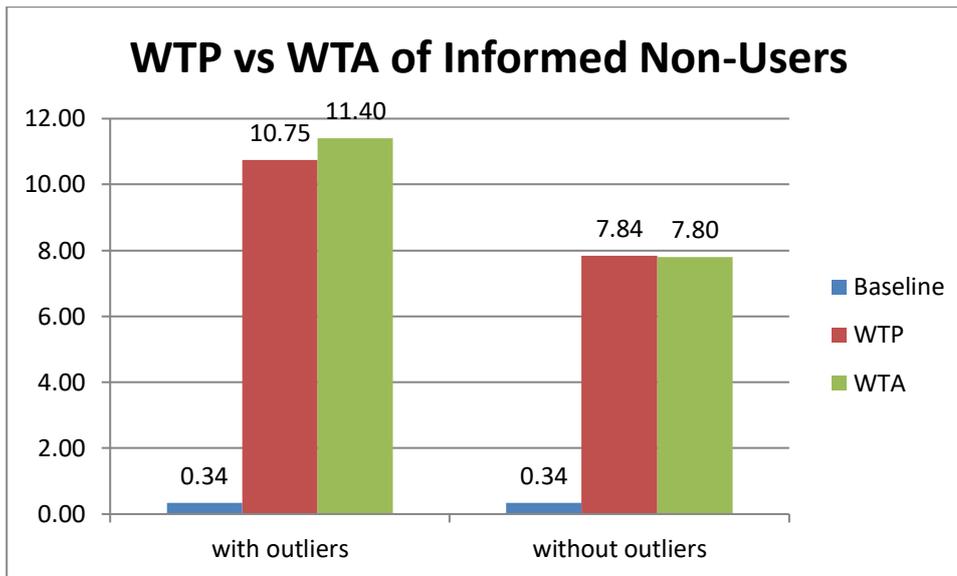


Figure 3. Comparison of Average Willingness to Pay and Willingness to Accept of Informed Library Non-Users

WTP and WTA should ideally be equal, that is, people should be willing to accept as much as they are willing to pay, and vice versa. People are more willing to receive money than to lose money, however, as can be seen in the comparison of the WTP and WTA, with outliers, shown in Figure 3. However, it is worth noting that removing the outliers, the WTP becomes only marginally more substantial than the WTA. This indicates that the respondents are actually willing to accept as much as they are willing to pay.

Valuation of Non-Users Uninformed of Baseline Value

Willingness to Pay

Non-Users Uninformed of Baseline Value reported Willingness to Pay with a maximum value of \$15,417.81 and a minimum value of Php0.00. With outliers, this revealed normalized values with arithmetic mean at n=180 of \$42.05. This shows that the respondents, uninformed of the baseline, are willing to pay 12,092.95% more than what they currently pay.

Data outliers were identified as $x=597.29$, $x=684.58$, and $x=1541.78$. Without the outliers, the new arithmetic mean at n=177 is \$26.81, an increase from the baseline value of 7673.45%,

Willingness to Accept

Non-Users Uninformed of Baseline Value reported Willingness to Accept with a maximum value of \$702.24 and a minimum value of \$0.00. The zero-value resulted from certain respondents not willing to accept compensation, which, in theory, also denotes their unwillingness to forfeit services. With outliers, the reported WTAs' arithmetic mean at n=180 is 33.89, an increase of 9728.9% from the baseline value.

Outliers were determined as $x=279.72$, $x=15225$, $x=490.39$, and $x=702.24$, without which resulted in new arithmetic mean with n=176 of 24.60, an increase of 7034.27% from the baseline value. Similarly, this huge range can be attributed to the range of socioeconomic background of the respondents, and they're unaware of the actual baseline value.

A combined comparison of the WTPs and WTAs of both Informed and Uninformed Non-Users, of both with and without outliers, is shown in Figure 4. The considerable increase in average WTPs and WTAs is noticeable with the values provided by those uninformed of the baseline value, much more than the values provided by those informed. By not telling the non-users of the baseline value they are currently paying, the reported WTPs and WTAs more than tripled. This high value of both WTP and WTA shows that without knowing the current amount they are paying and despite being non-users who are not actively using the library, the respondents were appreciative of the existence of the public library. Quezon City residents are then willing to pay for the continued operations of the public library and the continued provisions of its resources and services. Non-users have also set a high value for their willingness to accept compensation, meaning that they attribute high appreciation, regarding monetary value, for each service and resource.

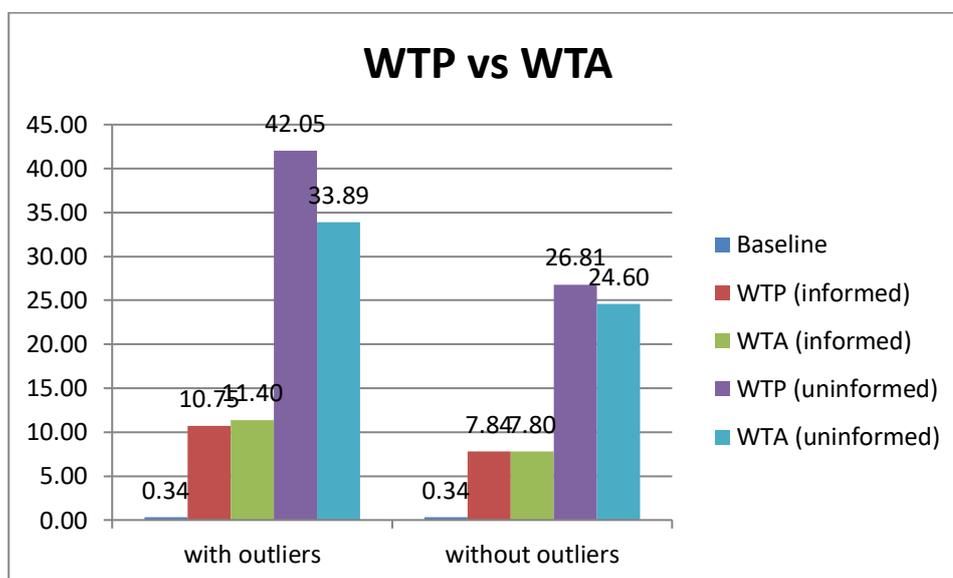


Figure 4. Comparison of Average Willingness to Pay and Willingness to Accept of Informed and Uninformed Library Non-Users

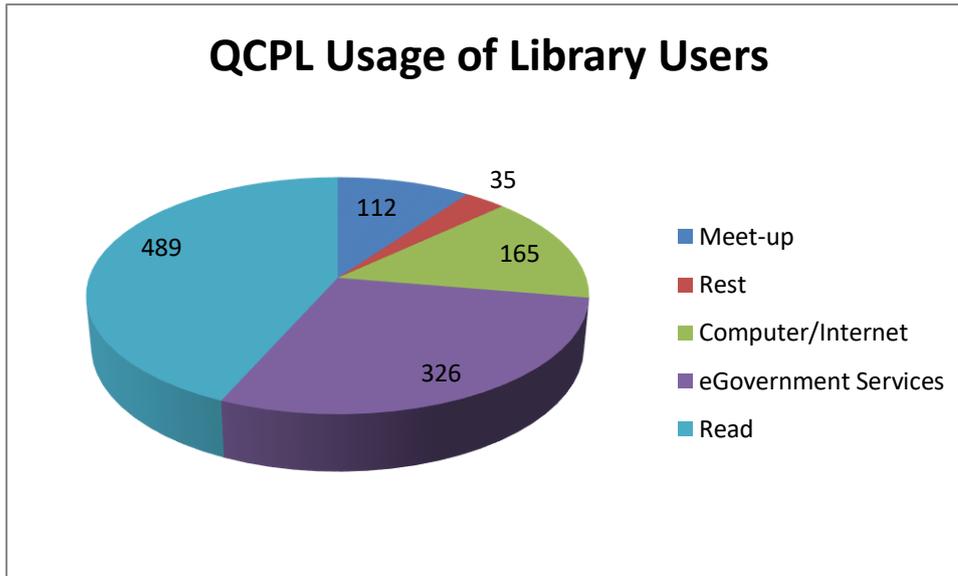
MAM of Library Users

Demographics

For this portion of the study, library users entering the premises were randomly given the survey in one week. No equalization of respondents regarding any factor was considered as to provide a more realistic depiction of the respondent population and as to reduce any response bias. A total of 752 respondents were collected, out of the posited user population of 80,280, resulting to a confidence level of 95% and a margin of error of ± 3.56 .

Usage of the QCPL

To produce a basis for quantification, library users were surveyed on their usage of the resources and services of the public library. Figure 5 shows the distribution of the library users and their reported usage of the library. It should be noted that users have reported the use of multiple resources and services, as such, responses exceed total sample population size.



Note: Multiple Responses

Figure 5. Distribution of Library Users regarding Library Usage (N=1127)

Library Users who reported to have read were asked to list down the resources they have perused during their stay. Resources used, classified into general categories, is shown in Figure 6.

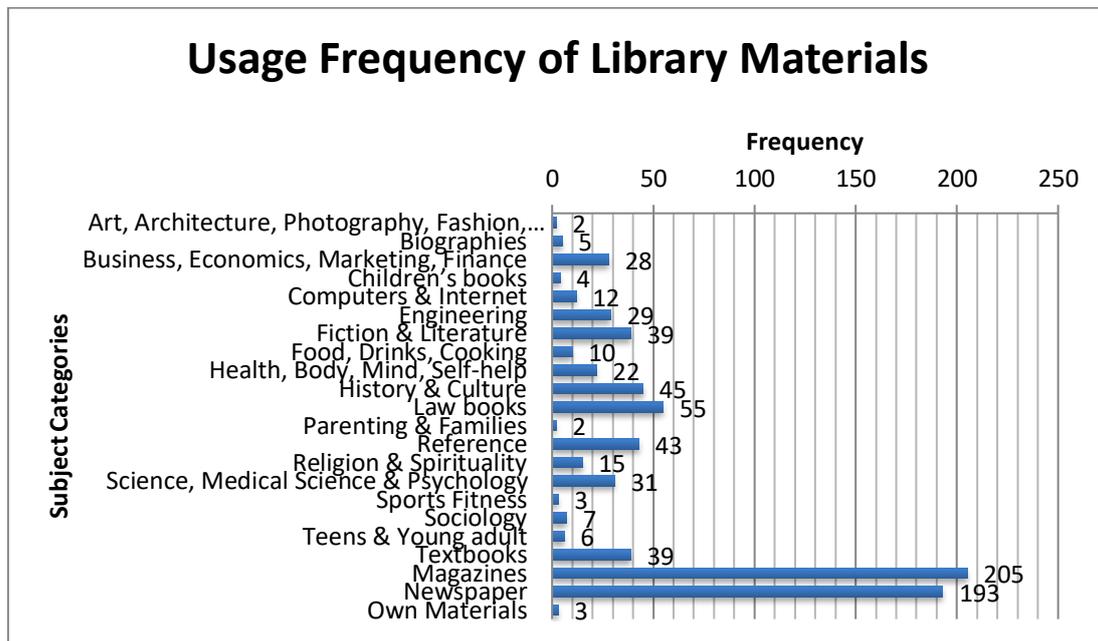


Figure 6. Frequency of Usage of Library Materials

Library users who reported to have met with other users, rested, or used the Computer and Internet Services were also asked to provide an approximate span of time that they have done said activity. Table 1 presents the number of respondents, total hours spent by respondents, and average time per respondent for each of activity

Table 1

Usage of the QCPL for Computer/Internet and as a Place for Rest and Meetings

	Number of Respondents	Total Number of Hours	Average Hour Spent
Meet with others	112	234.88	0.38
Rest	35	53.53	.09
Computer/Internet Services	165	312.84	0.49

Market Price Equivalent of QCPL Resources and Services

Reading Materials and Resources

The respondents were asked to enumerate the bookstores and second-hand bookstores that they frequent for buying books. Online catalogs and ocular visits in the branches of the bookstores mentioned above closest to the QCPL were used as a reference for the Market Price Equivalent of reading materials taking the lowest priced materials as to reduce bias in quantification providing the minimum Market Price value. Prices across various establishments were averaged to determine the market price equivalent of each subject category.

eGovernment Services

On the surface, eGovernment services shouldn't cost a thing as it's merely an online platform accessible from any internet capable device. Thus, what's actually being offered in the library is not only the platform itself but personal assistance for its users.

This assistance, provided free by the library, is also available from other third-party providers, internet shop owners, and independent street-guides with charge. Personal observations and informal interviews were conducted from the mentioned providers around QCPL to determine how much is charged. A minimum price of \$0.98 to a maximum of \$2.94 is being charged from QC Hall patrons unaware of the public library's free services. To reduce bias in quantification providing the minimum Market Price value, the minimum amount of \$0.98 is used as the Market Price Equivalent.

Computer and Internet Services

Respondents reported charges varied from \$0.20 per hour of usage to \$0.78 per hour when using internet shops instead of the library. Averaging reported rental rates, the average rate of \$0.28 per hour is used for the Market Price Equivalent.

Added Value of the QCPL as a Place

Library usage data has shown that patrons also often use the public library as a meeting place with classmates, or colleagues, and as merely a place to rest. As there is no direct equivalent market price for such places, the market equivalent price has been determined by asking the respondents the cost of having a project meeting, meeting up with friends, or resting somewhere else, and their respective fare expenses in getting there.

The average cost of getting a place for project meetings and for meeting with friends was then combined to determine the equivalent cost of using the library as a meeting place. Based on the results, the equivalent cost of using the library as a meeting place is \$2.26.

Similarly, the cost of getting a place and the travel cost of getting to the place has been combined to determine the total average cost of getting ones alone time or rest time. A total average cost of \$0.63 is used.

Use Value of QCPL

Combining the total average value per user of the library as an information source (Table 2), as an eGovernment service provider (Table 3), and as a Computer and Internet Service provider (Table 4), amount to \$11.53, the primary value of the QCPL. The added benefit of QCPL as a Place (Table 5) also amounts to \$0.75.

Table 2

Value Table and Average Value of QCPL as an Information Source

Library Material	Frequency	Average Market Price	Cost
Art, Architecture, Photography, Fashion, Design	2	\$15.55	\$31.09
Biographies	5	\$22.66	\$113.28
Business, Economics, Marketing, Finance	28	\$19.18	\$537.09
Children's books	4	\$2.69	\$10.75
Computers & Internet	12	\$13.71	\$164.48
Engineering	29	\$19.34	\$560.89
Fiction & Literature	39	\$15.98	\$623.22
Food, Drinks, Cooking	10	\$6.61	\$66.06
Health, Body, Mind, Self-help	22	\$11.43	\$251.45
History & Culture	45	\$20.78	\$934.93
Law books	55	\$20.09	\$1,105.02
Parenting & Families	2	\$14.45	\$28.89
Reference	43	\$31.25	\$1,343.64
Religion & Spirituality	15	\$9.02	\$135.35
Science, Medical Science & Psychology	31	\$21.15	\$655.61
Sports Fitness	3	\$17.58	\$52.75
Sociology	7	\$11.92	\$83.44
Teens & Young adult	6	\$4.90	\$29.42
Textbooks	39	\$14.56	\$567.76
Magazines	205	\$4.40	\$902.60
Newspaper	193	\$0.27	\$52.73
Own Materials	3	\$0.00	\$0.00
Total Value			\$8,250.45
Average Value per User			\$10.97

Table 3
Value Table and Average Value of QCPL as an eGovernment Service Provider

Factor	Value
Market Equivalent Price	\$0.98
Frequency of Usage	326.00
Total Cost	\$319.73
Average Value per User	\$0.44

Table 4
Value Table and Average Value of QCPL as Computer and Internet Services Provider

Factor	Value
Market Equivalent Rate per Hour	\$0.28
Total Number of Hours	312.84
Total Cost	\$86.89
Average Value per User	\$0.12

Table 5
Value Table and Average Value of QCPL as a Place

Place for Meetings		Place to Rest	
Market Equivalent Cost	\$2.26	Market Equivalent Cost	\$0.63
Hours Spent in the Library	234.88	Hours Spent in the Library	53.53
Total Cost	\$531.36	Total Cost	\$33.67
Average Value per User	\$0.71	Average Value per User	\$0.04
Total Average. Value per User			
\$0.75			

The obtained values are multiplied by the user population of 80,280 to determine the total use value of QCPL. Figure 7 shows the comparison between the total use value against the provided annual budget of QCPL. It can be seen that the total use value is slightly larger than the total budget of QCPL. This equates to a 3.51% increase or 103.51% of the total budget. This means that for every \$1.00 invested in the library, approximately \$1.04 worth is being utilized by the users.

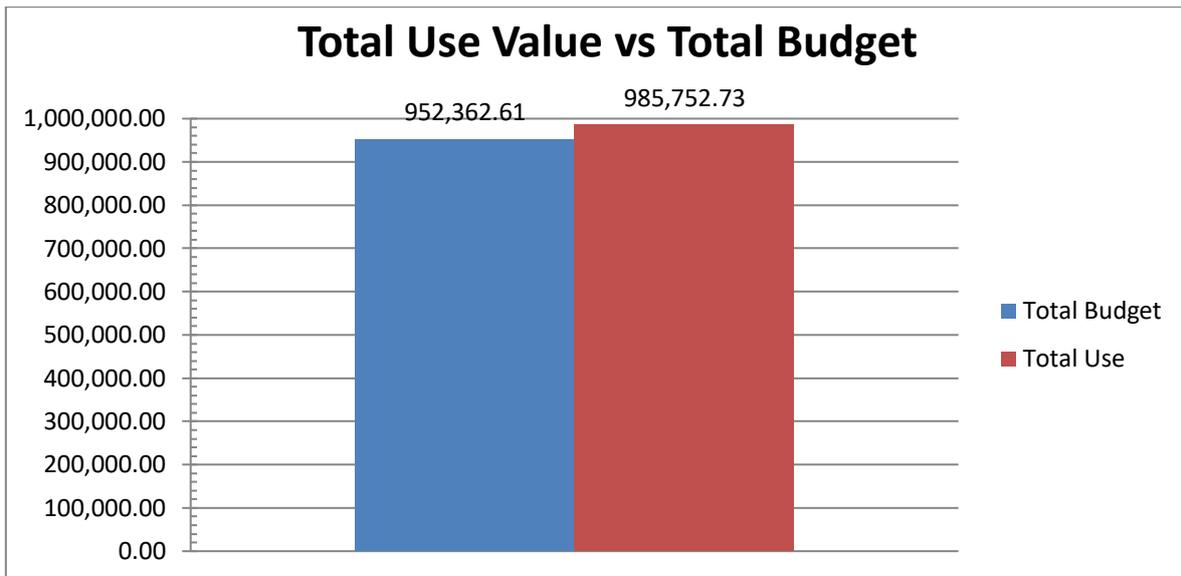


Figure 7. Comparison between the Total Use Value vs. the Total QCPL Budget

Conclusion

Regarding Non-use value, It can generally be concluded that the Quezon City Public Library a holds a more significant economic value to the non-users than the amount of funding being provided, as per the baseline average from each taxpayer. Compared to the baseline taxpayer amount, it can be concluded that non-users are willing to pay more than what they are currently paying in support of the library. The WTA value also denotes that, despite them being willing to accept compensation, they are quite aware of the high value of said resources and services.

For the Use Value, based on the 1:1.03 utilization ratio per dollar of investment, it can be concluded that QCPL is barely thriving in terms of utilization. Despite being able to provide a high worth of average use value for each respondent, the posited user population of 80,280 users just wasn't large enough. As such, there is apparently a need to reassess the library's marketing and publicity projects, if any, in order to boost library usage. Furthermore, the imbalance of resource usage implies the need for QCPL to assess the needs of their patrons further, and to maintain their collection's accessibility and availability.

With the above results, the researcher concludes that, although QCPL suffers from low use value utilization, there is a great potential from the non-users, with their high valuation, to abet the low user population of the library.

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