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Library & Information Science Research 29 (2007) 188–208

**Library &
Information
Science
Research**

Mind the gap: Societal limits to public library effectiveness

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Abstract

This article focuses on the effectiveness of Flemish (Belgian) public libraries in reaching a large and socially diverse public. A statistical model is developed which incorporates unique data gathered through a large-scale visitor survey, a survey of librarians and municipal demographic information. By taking into account both characteristics of the public library and its surrounding community, the impact public libraries themselves have on the number and composition of their visitors can be clearly assessed. Factors such as the percentage of CDs, videos, and DVDs in the collection, and the opening hours are positively associated with the overall number of visitors and also the amount of male visitors. However, the model reveals a rather limited impact of the library on the percentage of lower-educated visitors; this percentage seems to be largely determined by municipality characteristics. The results hope to contribute to a discussion on library effectiveness and the current demands being placed on libraries and their staff.

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1. Introduction

In 1978, the Flemish¹ government issued a decree obliging all municipalities to set up a public library if they had not already done so. Moreover, the Flemish government agreed to subsidize the library building and its collection and staff if conditions concerning the library collection, opening hours, and staff qualifications were met. Since the 1978 decree, the number

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¹ Flanders (or the Flemish-speaking community) refers to the Dutch-speaking part of Belgium. As an independent community within Belgium, it has complete authority over cultural policy, including public library legislation and policy.

of public libraries has risen substantially. In 2001, nearly all 308 Flemish municipalities had at least one officially recognized public library (either managed alone or in collaboration with another municipality).

Flemish libraries now have large and varied collections that are usually inexpensive to use. In January 2004, there were 303 libraries, and together they held more than 20 million books, 2 million compact discs, and 0.4 million CD-ROMs, videotapes, and DVDs. The median collection held 48,137 books, 3625 compact discs, and 680 CD-ROMs, videotapes, and DVDs. This is an average of 3.6 print materials and 0.32 compact discs per capita of the Flemish population (based on library data obtained from BIOS, the national Bibliotheek Informatie en OpleidingsSysteem database). For comparison, public libraries in the United States had an average of 2.9 print materials and 0.13 audio materials per capita in 2003 (Chute et al., 2005; own calculation).

Since Flanders is small and densely populated, many people have a public library nearby. There is one public library per 45 km² (17 sq mi), without taking into account the fact that more than half of the libraries have more than one service outlet. For comparison, in the United States there is one public library per 1046 km² (404 sq mi). Most libraries charge an annual membership fee for adults, but this fee averages only 2.50 Euros (\$2 USD) a year.

The dense geographical distribution, varied collections, and the low cost for users of Flemish public libraries lead to increased possibilities for library use (at least in principle). In such a context, it is interesting to investigate which libraries outperform others in attracting many visitors and reaching a representative sample of the population. This article therefore presents a quantitative analysis of public library effectiveness in attracting many visitors with diverse backgrounds. The analysis focuses on factors that libraries themselves can influence to improve their services. The data used for this analysis are limited to Flemish public libraries.

1.1. Public libraries: tools of cultural diffusion and democratization?

From their earliest conception at the beginning of the 19th century as private institutions funded through the charity of rising social elites or driven by the ideological motives of new political movements, public libraries have always been endowed with a more or less explicit humanistic mission. They were seen as key instruments in the diffusion of the new bourgeois ideology of moral development through cultural cultivation. When, during the second half of the 19th and a large part of the 20th century, the management and coordination of libraries were gradually brought under centralized control by newly formed governments, libraries did not abandon their original humanistic mission. On the contrary, libraries were considered as the tools par excellence to educate the public and to bring printed cultural goods within the reach of people of all ranks of society. Up to this day public libraries have essentially retained this twofold task of cultural diffusion and democratization (Kerslake & Kinnell, 1998; Muddiman et al., 2001; Pateman, 1999). With the rise of the information society and the new concerns surrounding the digital divide, public libraries see themselves faced with an additional set of tasks. They not only need to provide an accessible and democratic alternative to the bookstore but are more than ever faced with the task of offering the means for citizens to find their way in a digital and digitized world (de Munster, 2005; Hull, 2001).

Moreover, since public libraries (in Flanders and many other countries) are funded with taxpayers' money, it follows that public libraries should be equally accessible to all. The same argument goes for cultural participation in general. The current Flemish minister of culture stresses that, if cultural activities are subsidized by the government, all citizens should have equal access to and participation in these activities (Anciaux, 2004).

2. Problem statement

Despite the considerable cultural goodwill on the part of government administrations and people engaged in the library sector, it is often difficult to assess the degree to which public libraries can live up to such a plenitude of demands. It is often even harder to formulate library policy recommendations that are based on a clear knowledge of the complex relationship between the characteristics of a library and the characteristics of the community in which it is situated. What exactly are the aspects of a library's functioning that can be altered to effectively reach its societal demands and what are factors over which a public library has little control in its interaction with the surrounding community? The need for realistic and effective policy recommendations for public libraries is probably bigger than ever because libraries are faced with increasing demands but limited budgets. This study draws on data of Flemish public libraries to create a series of statistical models isolating factors that could help increase library effectiveness.

This article analyses Flemish public libraries' effectiveness in attracting visitors from all ranks of society. It is important to clarify what is meant by the word "effective." An effective library is defined here as a library that, given the context in which it operates, performs well in comparison with other libraries. Sometimes the performance of a library is affected by conditions on which it has no influence. For example, one could say that libraries that attract many visitors are doing well. However, a library situated in a densely populated area is very likely to attract more visitors than libraries in sparsely populated areas. In this case, an effective library would be a library in a sparsely populated area that attracts many visitors. To comment meaningfully on the performance of a specific library, one needs to measure it against the performance of other, similar libraries. This comparative rationale has previously been used to compare public library performance in the United States (Bassman, Lacampagne, Humes, Korb, & Chute, 1998). A systematic comparison makes it possible to isolate those factors which contribute to library effectiveness and help policy makers to shape less effective libraries according to the example of the most effective libraries (a process often referred to as *benchmarking*).

3. Literature review

3.1. *Social differences in library use*

It is well-known that the lower social classes visit public libraries less often (Lievens, Waeghe, & De Meulemeester, 2005; Muddiman, 1999; Smith, 1999; White, 1955; Yilmaz,

1998), show less interest in cultural practices, and have considerably lower rates of cultural participation (DiMaggio & Useem, 1978; Dumais, 2002; Lievens et al., 2005; van Eijck & Bargeman, 2004). A large-scale user survey in Flemish public libraries in 2004 confirmed that the socially disadvantaged are gravely underrepresented (Glorieux, Van Thielen, & Vandebroeck, 2005a). Interestingly, differences in income are not associated with differences in library use. However, differences in education are linked to library use—people with low levels of education are much less likely to visit public libraries than people who are highly educated (Glorieux et al., 2005a). Although these social differences in library use are no surprise to sociologists, the librarians themselves did not always seem to be aware of the gravity of this fundamental problem.

The fact that differences in educational degree rather than differences in income predict differences in library use confirms the repeated finding that many cultural practices and social and political attitudes are better predicted by education than by income (DiMaggio & Mohr, 1985; Dumais, 2002; Elchardus & Glorieux, 2002; van Eijck & Bargeman, 2004). Research underlines the fact that differences in the relationship to cultural practices start off very early in the life cycle, making the family one of the key areas where cultural inequalities are created and reproduced. The educational system confirms or reinforces cultural differences between social groups and partly transforms them into differences of merit (Aschaffenburg & Maas, 1997; Bourdieu & Passeron, 1979). Based on such research, it is argued here that the lower cultural participation and library use of the lowly educated is due to such cultural inequalities. The lower educated are less familiar with libraries and with implicit attitudes and rules that are applicable when visiting a library. This may cause them to feel uncomfortable in libraries and to avoid them.

Men are also underrepresented in Flemish public libraries. This is no surprise given the fact that Flemish men show less cultural participation in general (Lievens et al., 2005). This sex difference is less universal than the social class difference. In Turkey, for example, men visit public libraries more than women (Yilmaz, 1998).

3.2. *Library effectiveness*

Looking for determinants of library effectiveness is the last of six steps that Childers and Van House (1989) considered necessary in library effectiveness research. Identifying factors associated with library effectiveness is a very valuable input for library policy. In order to successfully implement benchmarking practices in library policy, it is indispensable to have a grounded knowledge of those factors which contribute to library effectiveness (Morse, 1969).

The effectiveness of libraries can be measured in many ways. Cullen and Calvert (1993) investigated what key constituencies in New Zealand public libraries thought an effective library should be. They gave a list of 95 possible indicators of library effectiveness to library users, librarians, and local library body councilors. The respondents had to indicate how important all of these were in judging the performance of a public library. The most important indicators for an effective library were judged to

be helpfulness of staff and competence of management. However, two other items that ranked in the top 20 for all three groups were “Extent of community awareness of library services” and “Match of library services to community needs.” This shows that the role of the public library in its local community was valued highly by the respondents in the New Zealand study.

In order to serve their community, libraries must first reach the community residents. In accordance with this reasoning, the New Zealand library effectiveness study (Cullen & Calvert, 1993) showed that people who highly valued the role of the library in its community also emphasized the items “Number of visits per demographic group (young, elderly, etc.)” and “Number of residents registered as members of library” as important indicators of library effectiveness. These are the measures for library effectiveness that will be used in this article. The first measure is the total number of registered users. The second and third measures of effectiveness focus on two key demographic groups which tend to be underrepresented among the visitors of public libraries: on the one hand the percentage of male visitors, on the other the percentage of lower-educated visitors.

For each of these three measures of library effectiveness, the performance of the libraries will be assessed while simultaneously taking into account the population composition of the local municipality. That is because an effectiveness study should clearly delineate between those aspects of the library organization that can actually be changed and those which have to be dealt with as given in a certain context. By taking into account such contextual factors, libraries are automatically compared to similar other libraries.

4. Research questions

Since library effectiveness touches both issues of cultural diffusion and cultural democratization, the research questions focus on these two aspects. The analysis will first look at the general profile of the library-going public. A review of the international literature reveals clear social inequalities in library use. Knowing that almost all Flemish municipalities have public libraries, that these libraries are inexpensive to use and have extensive collections, do Flemish public libraries manage to reach out to all societal strata or do social inequalities in library use also persist in the Flemish case?

The second research question focuses on the general reach of public libraries by asking, “Which libraries attract a high number of visitors, when taking into account relevant characteristics of the municipality that they function in?” The answer to this question provides a fairly straightforward indicator of the global success of a library.

The third question asked is, “Which libraries attract many lowly educated visitors, when controlling for the social and demographic characteristics of the municipality?” Similarly the fourth research question focuses on gender inequalities: “Which libraries manage to attract a lot of men, when controlling for the sociodemographic profile of the municipality?” The second question targets the issue of cultural diffusion, whereas the other questions all deal with cultural democratization.

5. Procedures

The analyses combined data from four different sources. The primary source was a large-scale survey of library visitors from January to June 2004. More than half of all Flemish public libraries (164 out of 303) participated in the survey. Depending on whether the library itself opted for a “basic” or an “extended” study model, either 275 or 850 registered users aged 18 years or older were randomly selected from among its members. When a selected user wanted to borrow an item from the library, he or she was given a 20-page questionnaire and asked to fill it out. The survey consisted of questions about social background, library use, library satisfaction, media use, and leisure time activities. Of the 72,200 library users who were initially selected for the study, a total of 32,041 users filled out the questionnaire. This amounts to a global response of 45% of the original sample. Furthermore, an electronic registration procedure also recorded each item that was lent from January until June, giving a very accurate description of user preferences. This article uses the following data from this user survey:

- The educational background of the users who filled out the questionnaire is used to calculate the percentage of library visitors who do not have a higher education degree.
- Information on the gender of library users is used to calculate the percentage of men in each library.

This public library user survey also included a questionnaire for librarians about various library characteristics. The library questionnaire was filled out after the user survey had ended. It contained questions about fees, fines, borrowing conditions, opening hours, computers, and various other characteristics. These data will be used to find out which library characteristics are associated with library effectiveness. In this article, the following library characteristics are used:

- membership fee;
- opening hours;
- lending period for books;
- fines for books and compact discs that are returned late;
- lending fee for compact discs, CD-ROMs, DVDs, and videotapes; and
- number of cultural activities organized by the library during the past year.

The second source of information is the BIOS database. BIOS centralizes the data that libraries provide about their collection, registered users, staff, and finances. These data are subjected to the control of the Flemish government administration in order to increase their reliability. These data will be used in order to find out which library characteristics are associated with library effectiveness. The following variables on the collection of the public libraries in January 2004 are used in the analyses:

- the percentage of children’s and juvenile books in the library collection;
- the percentage of fiction books;

- the percentage of non-fiction books;
- the percentage of compact discs;
- the percentage of CD-ROMs;
- the percentage of videotapes and DVDs; and
- the percentage of audiovisual items (sum of compact discs, CD-ROMs, videotapes, and DVDs).

The number of registered users in 2004 aged 15 years or older is also taken from the BIOS data. These are all library members who have borrowed at least one item during the year 2004.

The third source is a study of the Flemish Centre for Public Libraries (VCOB) about public libraries and information and communication technology (ICT). From their data, the number of computers (with and without Internet access) available to library visitors is used.

Finally, the information on municipalities that participated in the user survey is taken from data made available in various applications of the Belgian National Institute for Statistics (NIS). Municipality data provide the social context in which libraries operate, and in which their performance must be assessed. The following data on the municipalities' population reflect the situation of 1 January 2004:

- the number of inhabitants aged 15 or older; and
- the percentage of male inhabitants (for the population 18+).

Other NIS data are based on the 2001 Belgian census, which was used for indicators of social composition of the municipality:

- the percentage of inhabitants without a higher education degree;
- the percentage of inhabitants who do not have the Belgian nationality; and
- the percentage of inhabitants who live in a house without basic comfort (i.e., the house lacks a bathroom, running water, or a toilet indoors). This can be interpreted as a measure of poverty.

The mean income of the municipalities is taken from NIS data of the fiscal year 1998.

6. Findings

6.1. *Unequal participation in public libraries*

The lower educated are strongly underrepresented among the visitors of Flemish public libraries.² This article focuses on persons without a higher education degree, but results

² Six libraries had to be eliminated from the original sample of 164 because of incomplete data. All analyses are based on the remaining 158 libraries. Descriptive statistics on the library data and the way they are used in the analyses are presented in Appendix A.

are similar when those without secondary education degree are investigated. While 87.1% of the Flemish population does not have a higher education degree, this group represents only 46.5% of public library visitors (see Table 1). Differences are even more pronounced for lower levels of education. Compared to persons with a higher education degree, persons who have not finished secondary education were six times less likely to visit a public library in the first half of 2004. In accordance with the theories and evidence discussed in the introduction, someone's educational background has a profound influence on whether he or she visits a public library. Despite the fact that public libraries are in close proximity, well-equipped, and inexpensive to use, differences in educational level remain pronounced.

Men are another demographic group that is underrepresented in public libraries. Only 35% of library visitors are men.

Before moving to the analysis of library effectiveness in attracting men and the lower educated, library characteristics associated with a high overall number of library users are first investigated.

6.2. Library effectiveness analysis

The relative number of registered users, the percentage of lower-educated users, and the percentage of male users will be analysed using multiple regression analysis. Regression analysis calculates the strength of the association between each independent variable (in this case the different library characteristics) and the dependent variable (in this case the relative number of users registered in the library). The analysis also takes into account the influence of all the other independent variables in the model. This is an appropriate technique for a library effectiveness analysis because it needs to assess the relation between library characteristics and effectiveness over and above the influence of other factors that the library cannot influence. The factors that will be taken into consideration are municipality characteristics and library size. When constructing the regression model, the first step is to check whether municipality characteristics or library size are significantly associated with the dependent variable (one of the three indicators of library effectiveness). If so, these variables are kept in the regression model, to which all library characteristics are added later.

Table 1

Educational level of Flemish library users (aged 18+) and the Flemish population (aged 15+)

Educational level	Flanders (2004)	Library visitors (2004)
No or primary education	23.8	4.6
Lower secondary education	20.9	12.1
Higher secondary education	32.4	29.8
Higher education (college)	22.9	53.5
Total	100.0%	100.0% (N=27188)

Source: National Institute for Statistics (NIS) and public library user survey 2004.

The municipality characteristics used in this analysis are discussed in the Procedures section. The total number of items in the library collection is used as an indicator of library size.³

Some variables are logged before they are entered into the regression analysis, because their distribution shows a long right tail. Also, some of the library characteristics were partialled out for library size before they were entered into the regression analysis. This is necessary because the analysis wants to assess the association between library characteristics and effectiveness, independent of the relation between library size and effectiveness. Library size depends mainly on municipality size and cannot easily be influenced by the library itself. Partialling out for library size⁴ results in a measure that indicates, for example, how many computers a library has in comparison with other libraries more or less its own size. This new measure has a zero correlation with library size. Since library size is also in the multiple regression models, partialling out certain variables for library size also serves to avoid multicollinearity between independent variables.

6.3. *Relative number of registered users*

The first indicator for library effectiveness is the number of people who are registered as library users. Of course, this number has to be compared to the total number of residents in a certain municipality. Therefore, the analysis looks at the ratio of the number of registered users and the number of inhabitants of the municipality. As explained in the introduction, nearly all Flemish municipalities have a state-subsidized public library, so these ratios can be meaningfully compared between different municipalities.

The relative number of registered users is analysed using multiple regression analysis. The ratio between the number of users and the number of inhabitants of the municipality is treated as the dependent variable. Libraries from the Brussels region were excluded from this analysis since many French-speaking people live in this region. French-speaking people generally do not visit Flemish libraries, and there are no data on the exact amount of French-speaking persons in or near Brussels.

Independent variables in the multiple regression analysis are municipality and the library characteristics discussed in the Procedures section. All variables are entered into the model, but only those who are significantly associated with the relative number of registered users are kept. The final model of this analysis is presented in [Table 2](#).

One municipality characteristic is significantly associated with the relative number of registered users: there are relatively fewer library users in municipalities with many poor residents (where many people live in a house without basic comfort). Serious poverty

³ Municipality size cannot be included in the analysis as well because the number of inhabitants has a 0.76 correlation with number of items in library collection. This high correlation generates multicollinearity problems in the regression models.

⁴ This is done by regressing library size on the other library characteristic (e.g., number of computers), and then saving unstandardized residuals.

Table 2

Regression analysis of the ratio of registered users and municipality inhabitants (excluding municipalities in the Brussels region)

	Regression coefficient	Standard error	Beta	<i>t</i> -value	<i>p</i> -value
Intercept	−40.589	8.577		−4.733	0.000
Percentage of houses without basic comfort (log)	−5.475	2.328	−0.142	−2.352	0.020
Number of items in collection (log)	13.726	1.812	0.515	7.577	0.000
Percentage of audiovisual materials	0.346	0.085	0.279	4.044	0.000
Number of opening hours (partialled out for library size)	0.281	0.090	0.192	3.113	0.002
Number of computers (partialled out for library size)	0.240	0.090	0.162	2.678	0.008
Membership fee between 1 and 3 Euro (ref=no fee)	−2.191	1.095	−0.144	−2.001	0.047
Membership fee higher than 3 Euro (ref=no fee)	−6.712	1.322	−0.390	−5.078	0.000

R^2 (explained variance)=0.52 ($N=146$).

remains an important obstacle to the use of the local public library, despite low economic thresholds. The other municipality characteristics are not significantly associated with the relative number of registered users.

Large libraries have many more registered users (relative to the number of residents in their municipality) than small libraries. Part of this effect is probably due to the regional function of some of the larger libraries: they attract visitors from smaller communities searching for a larger offer of materials.

More interestingly, four library characteristics are associated with the relative number of registered users. Public libraries with a high percentage of audiovisual materials (compact discs, CD-ROMs, videotapes, DVDs) seem to attract more visitors. There is a similar but slightly weaker relationship with the percentage of compact discs alone. The percentage of CD-ROMs and the percentage of videotapes and DVDs are not associated with a higher relative number of library users.

Both the number of opening hours and the number of publicly accessible computers are associated with a higher relative number of registered library users. It is important to emphasize that this association cannot be due to library size, as both variables are partialled out for library size. This means that libraries with extensive opening hours or more computers than other libraries of a similar size attract more visitors. Finally, libraries that charge a high membership fee tend to have fewer visitors.

These four relations also hold when only those users who visit the public library in the municipality where they live are taken into account. In this case, the dependent variable is the percentage of municipality residents who have borrowed at least one item at the public library in the past year. The relations with the library characteristics (percentage of audiovisual materials, opening hours, number of computers, and membership fee) are somewhat smaller, but still statistically significant (all $p < 0.05$).

Fines, lending fees, lending period, and number of cultural activities are not associated with the relative number of registered library users.

6.4. Lower-educated library users

A similar multiple regression analysis was performed for the percentage of lower-educated library users. The objective was to know which library characteristics are associated with a high proportion of socially disadvantaged library visitors.

Again, the specific interest of these analyses is in things that libraries themselves can do or change to attract more socially disadvantaged visitors. This means that the proportion of lower-educated residents of the community, in which the library is embedded, has to be taken into account. It is self-evident that libraries in municipalities with many lowly educated citizens have more lowly educated visitors, but this tells us nothing about library effectiveness. There is a strong relationship between the percentage of lower-educated residents and the percentage of lower-educated library visitors (0.76 correlation). In order to control for the influence of the local population composition, the percentage of lowly educated library visitors is partialled out for the percentage of lowly educated residents in the municipality.⁵ The new measure indicates whether a library attracts more or fewer lowly educated visitors, compared to other libraries in municipalities with a similar percentage of lowly educated residents.

The next step in the analysis was to check whether other municipality characteristics were associated with the percentage of lowly educated library visitors. Libraries in municipalities with much poverty appear to have relatively fewer lowly educated visitors. This suggests that material poverty forms an additional obstruction to library use for those who are already culturally deprived. Furthermore, large libraries also have fewer lower-educated visitors. The other municipality characteristics did not have a significant relationship with the percentage of lower-educated visitors. Together, these three indicators (the percentage of lowly educated residents, the percentage of people living in a house without basic comfort, and the library size) explain 65% of the variation in the percentage of lowly educated visitors. It can therefore already be concluded that the proportion of lowly educated visitors is largely determined by municipality characteristics.

In the last step of the multiple regression analysis, the effects of municipality characteristics are kept in the regression model, and all library characteristics (discussed in Section 5) are added. Only two library characteristics are significantly associated with the percentage of lowly educated visitors, and only if combined into one variable. Libraries with a membership fee higher than 3 Euro (\$3.90 USD) and fines higher than 30 Eurocent (39 U.S. cents) per book per week have fewer lowly educated visitors (Table 3).

All these results are very similar if the lower educated are defined as persons without secondary education degree (instead of persons without higher education degree, as is done in the analyses presented here).

There is a clear contrast between the analysis of the relative number of registered users and of the percentage of lowly educated users. In the latter, library characteristics are much less important and explain much less of the variance. This means that a library policy which

⁵ This is done by saving the unstandardized residuals of a regression analysis with the percentage of lowly educated residents as an independent and the percentage of lowly educated library visitors as a dependent variable.

Table 3

Regression analysis of the percentage of library users without higher education degree (partialled out for the percentage in the municipality)

	Regression coefficient	Standard error	Beta	<i>t</i> -value	<i>p</i> -value
Intercept	29.721	7.784		3.818	0.000
Percentage of houses without basic comfort (log)	−10.399	2.204	−0.334	−4.718	0.000
Number of items in collection (log)	−4.688	1.600	−0.217	−2.931	0.004
Membership fee more than 3 Euro and fines for books more than 30 Eurocent per week	−4.356	1.425	−0.226	−3.058	0.003

R^2 (explained variance)=0.23 ($N=158$).

effectively increases the number of visitors does not necessarily lead to more diversity among these visitors.

6.5. Male visitors in the library

As men are also underrepresented in public libraries, the effectiveness of libraries in attracting men was investigated through a multiple regression analysis of the percentage of male visitors. A first step in this analysis was checking whether the percentage of male visitors is associated with municipality characteristics or with library size. Unexpectedly, the percentage of men in the municipality population has a negative relation with the percentage of male visitors (Table 4). Further analyses revealed that this is because smaller municipalities have more men in the population but fewer men in the library. Library size (which is highly correlated with municipality size) has a strong, positive relation with the percentage of male visitors: in large libraries, the proportion of male visitors is much higher. The other municipality characteristics did not have a significant relationship with the percentage of male library users.

All the library characteristics are now added to the regression model that already has the percentage of male inhabitants and library size as independent variables. Public libraries with a larger proportion of audiovisual materials attract more male visitors (Table 4). Looking at different types of audiovisual materials reveals that libraries with a larger proportion of

Table 4

Regression analysis of the percentage of male library visitors

	Regression coefficient	Standard error	Beta	<i>t</i> -value	<i>p</i> -value
Intercept	52.972	17.627		3.005	0.003
Percentage of male inhabitants (18+)	−1.422	0.333	−0.235	−4.271	0.000
Number of items in collection (log)	9.868	1.505	0.421	6.556	0.000
Percentage of audiovisual materials	0.200	0.071	0.186	2.838	0.005
Compact discs for maximum 40 Eurocent	2.503	0.958	0.158	2.614	0.010
Open on four or five evenings	2.189	0.851	0.155	2.573	0.011

R^2 (explained variance)=0.55 ($N=158$).

compact discs and libraries with a larger proportion of videotapes and DVDs have significantly more male visitors, but libraries with a larger proportion of CD-ROMs do not. It is not only the size of the collection that is important, but also the borrowing conditions. Over and above the effect of the collection of audiovisual materials, libraries that have compact discs but only charge a maximum of 40 Eurocent lending fee have more male visitors than libraries without compact discs or libraries that charge a lending fee over 40 Eurocent.

Another factor that is positively associated with the percentage of male visitors is the number of opening hours: libraries with more opening hours tend to have more male visitors. Looking at this relationship in more detail shows that libraries that are open on four or five evenings (Monday–Friday) have on average two percentage points more male visitors (Table 4). Opening hours during the weekend, mornings, or afternoons are not associated with the percentage of male visitors. The other library characteristics were not significantly associated with the percentage of male library visitors.

7. Discussion

The results of the statistical analysis give only limited cause for optimism. When it comes to attracting a larger number of visitors or attracting more male visitors, public libraries seem to have some tools at their disposal. Even when taking into account the size of the library and the population size of the community it serves, there clearly is a higher number of registered users among libraries with a high proportion of audiovisual materials in their collection, extended opening hours, a large number of personal computers, and a low membership fee. These results also hold if only the visitors who live in the library's municipality are taken into account and those who come from other municipalities are ignored. To the best of our knowledge, this is the first time that these relationships have been shown in a quantitative analysis. Furthermore, the statistically significant association between extended opening hours and a higher number of registered users adds to the findings of Proctor, Lee, and Reilly (1998), whose study was inconclusive on the relation between opening hours and library use.

A look at the general diversity of the users of public libraries identified two key groups that are very often underrepresented, namely men and the lower educated. When it comes to attracting more male visitors, some measures were clearly associated with the percentage of male visitors. Libraries with a higher proportion of men among the visitors tend to have a large collection of audiovisual materials. Libraries with compact discs and relatively low lending fees (max. 40 Eurocent) appear especially successful in attracting a more male audience. The fact that more men visit libraries with a large collection of audiovisual materials is not very surprising as it was already known that men use the collection of VHS, DVDs, and CDs much more frequently than women do (Glorieux, Vandebroek, & Van Thielen, 2005b). Finally, men also tend to be represented better in libraries that are open four or five evenings a week (Monday–Friday). This might be due to the fact that library visits and full-time employment are difficult to combine. When men are offered the possibility of visiting a public library on weekday evenings, they appear eager to use such an opportunity.

For the absolute number of visitors and the gender composition of its users, public libraries have some margin to maneuver. However, when it comes to reaching socially disadvantaged groups, in this case the lower educated, the impact of library characteristics appears very limited. Almost two-thirds of the variance in the percentage of lower-educated visitors of Flemish libraries can be attributed to municipality characteristics. If a public library appears to be attracting more lower-educated visitors, this is for a large part due to the fact that the community itself has a generally low level of education. Only one aspect of a public library's functioning was slightly associated with the number of lower-educated visitors: the amount of the membership fee and the fines. Public libraries charging annual fees higher than 3 Euro (\$3.90 USD) and fines exceeding 30 Eurocent (39 U.S. cents) tend to have a smaller proportion of lower-educated visitors. Other factors such as the types of collections that are offered, the number of hours and days the library is open, the number of personal computers that can be used, and the amount of cultural activities that are organized play no significant role in attracting the socially disadvantaged.

Despite the fact that Flemish libraries bring an extensive range of cultural goods into close proximity at often very low cost, large social differences in library use remain. Whereas 45% of the Flemish population has not finished secondary education (high school-level), this holds true for only 17% of public library users. Differences for people with a lower educational level are even more pronounced (Table 1).

When it comes to fulfilling their original humanistic mission of bringing culture within the reach of everyone, including those who occupy the humblest positions in society, public libraries cannot always live up to those demands. This has been underlined by previous studies on Flemish public library use (Glorieux et al., 2005a; Glorieux et al., 2005b) and also seems to be the case abroad (Smith, 1999; Yilmaz, 1998). While there is a small margin to influence the demand through the offer, in a lot of cases libraries find themselves faced with social inequalities which they alone cannot solve. Despite this, the ideal of equal access to public libraries (and other cultural institutions) still lives on. The current Flemish minister of culture emphasized equal participation as one of his most important policy goals (Anciaux, 2004, 2005). An important argument is that public libraries are funded with tax revenues and should therefore be accessible by all. This, however, is still not the case. Libraries do not exist in a social vacuum. The broader inequalities which characterize society as a whole also bar the entrance to the public library for a lot of people.

At their origin in the United States and the United Kingdom in the 19th century, public libraries were explicitly aimed at educating all citizens, including the lower classes (De Cock, 2000; Muddiman, 1999). Public library founders and advocates considered reading to be a useful pastime. In spite of this humanistic philosophy, Muddiman (1999) notes that English public libraries experienced problems in reaching the lower classes right from the start. Often, rules about silence and cleanliness were established. Public libraries developed into institutions directed at the skilled and the middle class. A recent British study evaluated libraries' attempts to reach the lower classes (Muddiman et al., 2001). It concluded that these efforts are scattered and are not maintained.

This quantitative analysis of the effectiveness of public libraries in attracting lowly educated citizens could lead to interesting results. Unfortunately, only one significant association

between library characteristics and the percentage of lowly educated library visitors was found. None of the other library characteristics mentioned in the Procedures section are associated with the proportion of lowly educated visitors. This can be due to at least two reasons: (1) the research presented here did not measure the relevant library characteristics or (2) there are no systematic differences between libraries in the relative proportion of lower-educated library visitors. The fact that municipality characteristics explain almost two-thirds of the variance in the percentage of lower-educated library visitors supports the second explanation. This result suggests that differences in public library use due to educational level are much more deeply rooted than the gender differences. If public libraries want to uphold the goal of equal access, they will have to look for new strategies.

The results of the library effectiveness analyses underline the importance of controlling for contextual factors when assessing library effectiveness. Municipality population composition was consistently associated with the measures of library effectiveness used in this study. The percentage of inhabitants who live in a house without basic comfort (a measure of poverty) is negatively associated with the relative amount of registered library users and the percentage of lowly educated library visitors. The number of community residents is also related to the measures of library effectiveness but does not appear in the models because of its high correlation with library size. Finally, the percentage of lowly educated inhabitants is strongly correlated with the percentage of lowly educated library visitors.

8. Conclusion

This article has provided evidence that large social differences in public library use remain even when public libraries are nearby, have large collections, and are inexpensive to use. Men and especially the lower educated are much less likely to visit public libraries.

The relative number of registered users and the proportion of male visitors are influenced by factors such as the proportion of audiovisual materials in the library collection and extended opening hours. The proportion of lower-educated visitors was largely determined by municipality characteristics. Only two library characteristics were marginally associated with the proportion of lower-educated visitors. Reaching the socially disadvantaged thus still seems an unachievable goal for public libraries.

If the analysis presented here does not give cause to excessive optimism, it also raises the question as to how far the demands that are placed on public libraries prove to be realistic. There are certain steps that libraries and library staff can undertake, but they can only do so much. If public libraries want to develop new strategies to achieve their goals of cultural diffusion and democratization, they cannot do this in isolation. Tackling the social inequalities that characterize library use will have to involve close cooperation with other cultural and social institutions. It will also involve improved scientific knowledge of the relationships between public libraries, local communities, and library users. We hope this article contributes to such knowledge and helps to enable a rational, empirically grounded approach to library policy.

Appendix A. Descriptive statistics of library characteristics

Table 5 shows information about the collection of the public libraries that took part in the 2004 user survey. Flemish public library collections consist mainly of books: more than three-quarters of all items are fiction, non-fiction, or juvenile books. In recent years, there has been an important growth in the offer of audiovisual materials. Most audiovisual materials are compact discs. CD-ROMs, videotapes, and DVDs only account for a small proportion of the library collection.

All library books can be borrowed for free, but audiovisual materials are often subject to a lending fee. The lending fees (applicable in January 2004) for four types of materials are presented: compact discs (Table 6), CD-ROMs (Table 7), videotapes (Table 8), and DVDs (Table 9).

A.1. Fines and lending period

When library materials are returned late, users must pay a fine. The fines for the two most popular materials are used in the analyses: books and compact discs. In Flemish public libraries, fines for compact discs are higher than fines for books (Tables 10 and 11). Concerning the lending period of books, a distinction is made between libraries where books can be lent for at least four weeks and all other libraries (Table 12). This is without taking into account possible extensions of the initial period.

A.2. Membership fee

Public library membership is free in almost one out of three libraries (Table 13). Libraries that charge a high membership fee usually also charge more for borrowing audiovisual materials. There are, however, some exceptions. Eight libraries have a considerable collection of audiovisual materials (more than 10% of the total collection), but they do not charge for borrowing compact discs, CD-ROMs, videotapes, or DVDs. In

Table 5
The collection of the public libraries that participated in the 2004 user survey

	Mean	Median	Standard deviation	Minimum	Maximum
Percentage of fiction books	28.5	28.4	4.4	17.0	42.7
Percentage of non-fiction books	25.1	24.5	4.7	13.0	40.2
Percentage of juvenile books	33.6	33.5	7.6	14.4	55.2
Percentage of compact discs	6.8	8.0	5.8	0.0	28.0
Percentage of CD-ROMs	0.85	0.82	0.63	0.00	3.49
Percentage of videotapes and DVDs	0.85	0.48	1.07	0.00	6.14
Percentage of other materials (journals, documents, newspapers, etc.)	4.3	3.2	3.2	0.4	22.9
Total number of items in collection (100 %)	80661	59886	78697	13437	653465

Source: BIOS 2004.

Table 6
Availability and lending fee for compact discs

	Number of libraries	Percentage
No compact discs	47	29.7
Compact discs available, but no lending fee	15	9.5
Lending fee up to 40 Eurocent	23	14.6
Lending fee more than 40 Eurocent	73	46.2
Total	158	100.0

Source: Public library user survey 2004.

Table 7
Availability and lending fee for CD-ROMs

	Number of libraries	Percentage
No CD-ROMs	16	10.1
CD-ROMs available, but no lending fee	32	20.3
Lending fee up to 1 Euro	51	32.3
Lending fee more than 1 Euro	59	37.3
Total	158	100.0

Source: Public library user survey 2004.

Table 8
Availability and lending fee for videotapes

	Number of libraries	Percentage
No videotapes	73	46.2
Videotapes available, but no lending fee	22	13.9
Lending fee up to 1 Euro	19	12.0
Lending fee more than 1 Euro	44	27.8
Total	158	100.0

Source: Public library user survey 2004.

Table 9
Availability and lending fee for DVDs

	Number of libraries	Percentage
No DVDs	48	30.4
DVDs available, but no lending fee	17	10.8
Lending fee up to 1 Euro	34	21.5
Lending fee more than 1 Euro	59	37.3
Total	158	100.0

Source: Public library user survey 2004.

Table 10
Fine for books per week

Fine per book per week	Number of libraries	Percentage
Fine less than 13 Eurocent	31	29.6
Fine 13 through 23 Eurocent	43	27.2
Fine 23 through 25 Eurocent	44	27.8
Fine at least 30 Eurocent	40	25.3
Total	158	100.0

Source: Public library user survey 2004.

Table 11
Fine for compact discs per week

Fine per compact disc per week	Number of libraries	Percentage
No compact discs	47	29.7
Fine less than 0.50 Euro	42	26.6
Fine 0.50 Euro	36	22.8
Fine more than 0.50 Euro	33	20.9
Total	158	100.0

Source: Public library user survey 2004.

Table 12
Lending period for books

	Number of libraries	Percentage
Less than four weeks	105	66.5
At least four weeks	53	33.5
Total	158	100.0

Source: Public library user survey 2004.

Table 13
Annual membership fee for adults

	Number of libraries	Percentage
No membership fee	47	29.7
From 1 to 3 Euro	71	44.9
More than 3 Euro	40	25.3
Total	158	100.0

Source: Public library user survey 2004.

Table 14
Number of hours library is open in a normal week

	Median	Mean	Standard deviation	Minimum	Maximum
Number of hours library is open in a normal week	21.3	25.1	9.0	10.0	53.5

Source: Public library user survey 2004.

Table 15
Number of evenings library is open at least until 7pm (Monday–Friday)

	Number of libraries	Percentage
Open on one evening	8	5.1
Open on two evenings	40	25.3
Open on three evenings	52	32.9
Open on four evenings	36	22.8
Open on five evenings	22	13.9
Total	158	100.0

Source: Public library user survey 2004 and library Web sites.

Table 16
Number of mornings library is open (Monday–Friday)

	Number of libraries	Percentage
Not open in the morning	52	32.9
Open on one morning	63	39.9
Open on two mornings	18	11.4
Open on three mornings	7	4.4
Open on four mornings	6	3.8
Open on five mornings	12	7.6
Total	158	100.0

Source: Public library user survey 2004.

Table 17
Number of mornings, afternoons, or evenings library is open during the weekend

	Number of libraries	Percentage
One morning, afternoon, or evening open during weekend	114	72.5
More than one morning, afternoon, or evening open during weekend	44	27.5
Total	158	100.0

Source: Public library user survey 2004.

Table 18
Number of computers accessible for library visitors

	Mean	Median	Standard deviation	Minimum	Maximum
Number of computers	7.4	6.0	6.6	1	52
Number of computers with internet access	4.3	2.5	4.6	1	32

Source: Flemish centre for public libraries (VCOB).

Table 19
Number of cultural activities the library organized during the past year

	Median	Mean	Standard deviation	Minimum	Maximum
Number of cultural activities	5.0	9.5	12.5	0.0	100.0

Source: Public library user survey 2004.

contrast, the annual membership in these libraries is higher on average (a mean of 4.50 Euro versus a mean of 2.40 Euro for all libraries). These eight libraries will be compared with all other libraries in all analyses in this article.

A.3. Opening hours

Public libraries that participated in the 2004 user survey are open 25 hours per week on average (Table 14). One library in four is open more than 30 hours per week. The number of evenings that libraries are open can be found in Table 15; the number of mornings is in Table 16. A summary of openings hours during the weekend is given in Table 17.

A.4. Computers

Half of all public libraries have one or two computers with Internet access. Ten percent of libraries have more than 10 computers with Internet access, bringing the mean to 4.3 (Table 18).

A.5. Cultural activities

The average library that participated in the 2004 user survey organized five cultural activities. One in 10 libraries organized 20 or more cultural activities and are responsible for the high mean of 9.5 (Table 19).

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