

THE THE THE
ECONOMIC ECONOMIC
VALUE VALUE
OF OF OF
PUBLIC PUBLIC
LIBRARIES LIBRARIES

Tænketanken

**Fremtidens
Biblioteker**



The economic value of public libraries

Prepared by Copenhagen Economics
for the Danish Think Tank Libraries of the Future
with support from the Danish Agency for Culture's development funds for public and school libraries
and the Danish Library Association

Copenhagen
Economics **CE**

Authors:
Christian Jervelund, Partner
Anders Oskar Kjøller-Hansen, Economist
Jossi Steen-Knudsen, Economist
Johanne Jørgensen, Analyst

www.fremtidensbiblioteker.dk

Foreword

Danish public libraries fulfil many societal functions at local and national level, and, without a doubt, many Danes consider libraries a significant contribution to our society.

However, in most surveys, libraries' contribution is often measured on the basis of user satisfaction and number of book loans. Although interesting and relevant, these factors are far from adequate if we are to learn more about how to assess the social role and impact of libraries – not least as a welfare institution.

This is why the Danish Think Tank Libraries of the Future has asked Copenhagen Economics to estimate the economic impact of public libraries. The survey is the first of its kind to assess the value of public libraries in monetary terms and in relation to GDP.

The aim of the survey, 'The Economic Value of Libraries', is to strengthen libraries' possibilities for action and development as they work to clarify their role in society. Not necessarily as an independent entity, but as a co-creator in helping carry out some of the core functions of a welfare society. The survey convincingly documents the strengths and potential of libraries, while also creating a platform for debate about their future role, what their primary tasks should be, and how they should be measured.

An ISO standard (ISO-16439) already exists for assessing the economic impact of libraries. We can view an assessment of libraries through the prism of one or more analyses: 1) value for users/non-users, 2) effect on the economy via competency enhancement, and 3) the role of libraries as employers (payroll subject to taxation) and purchasers of books, cleaning services etc. We have chosen to focus on analyses 1 and 2, because 3 applies to all public institutions and private companies.

The survey has received support from the Danish Agency for Culture's development funds and the Danish Library Association. The Danish Think Tank Libraries of the Future would also like to extend special thanks to a dedicated working group for its efforts and contribution to the survey. The working group consisted of May-Britt Diechmann, Varde Library; Isabella Gothen, Roskilde Libraries; Morten Skovvang Jensen, Centre for Culture and Leisure (Center for Kultur og Fritid) in Hørsholm; Steffen Nissen, Odense Central Library; Stig Grøntved Larsen, Gentofte Libraries; Nanna Kahn-Rasmussen, IVA; Jonna Holmgaard Larsen, the Danish Agency for Culture and Michel Steen-Hansen, the Danish Library Association.

We hope that both the library community and external bodies will draw on the diversity of knowledge that the survey provides and that this knowledge will inspire an important debate about culture and its contribution to the welfare society.

Lotte Hviid Dyrbye, the Danish Think Tank Libraries of the Future and Christian Jervelund, Copenhagen Economics

Table of contents

Foreword	3
Summary	9
1 The cultural and social contribution	13
1.1 Non-users	13
1.2 Willingness to pay	14
1.3 Cultural contribution	16
1.4 Social contribution	18
1.5 Summary	19
2 The educational contribution	20
2.1 Reading skills	20
2.2 Educational level	23
2.3 Productivity	25
2.4 Economic effects	26
2.5 Summary	28
3 The digitalisation contribution	29
3.1 Digitalisation	29
3.2 Economic effects	30
3.3 Summary	36
4 Future contributions?	37
4.1 Information architecture	37
4.2 The next Skype	40
4.3 Summary	41
Bibliography	42

List of tables

Table 1	Studies that include non-utility value	16
Table 2	Where do children who read in their spare time get their books from?	27

List of boxes

Box 1	Danes attach great importance to libraries	22
Box 2	Calculating the economic impact	28
Box 3	Information structuring is becoming increasingly important	37
Box 4	Private companies exploit the potential of librarians' strong information architecture skills	38
Box 5	Examples of course instructions for pupils	39
Box 6	Information structuring is becoming increasingly important	41

List of figures

Figure 1	Assessment of the Royal Danish Theatre	13
Figure 2	Non-users think libraries are important	14
Figure 3	Motivation for library assessment	15
Figure 4	Culture in Denmark with and without libraries	17
Figure 5	Number of visits and book loans	19
Figure 6	Correlation between interest in reading and reading ability	20
Figure 7	Children who read in their leisure time borrow library books	21
Figure 8	Library loans to children	22
Figure 9	Correlation between reading ability and educational level	23
Figure 10	Use of libraries and educational level	24
Figure 11	Correlation between education and annual income	25
Figure 12	The economic impact of education	26
Figure 13	The libraries' contribution to digitalisation gains	30
Figure 14	Major gains from the digitalisation of marginalised citizens	32
Figure 15	Costs of standard mail vs. email	33
Figure 16	Staff time consumption in connection with citizen service	34
Figure 17	Price using payment slips	35
Figure 18	Time saved using lifeindenmark.borger.dk	36
Figure 19	Distribution of employment for newly qualified librarians by sector	38

Summary

The traditional role of public libraries is changing. Libraries once offered a unique gateway to knowledge; now they are merely one of many knowledge providers on multiple platforms.

Without their traditional role as a 'knowledge bank', libraries are finding it increasingly difficult to defend their economic justification and consequently have an ever-increasing need to demonstrate their value for society.

The understanding of the total value created by libraries in Denmark is relatively limited. We know that Danes visit libraries more than 36 million times a year, a statistic that makes libraries Denmark's most visited cultural institution. We also know that Denmark's almost 500 libraries give Danes nationwide access to libraries and library services. However, activity - which can be measured - is one thing; value is quite another. Our knowledge in this area to date is sparse.

Value through cultural and social contributions

In this analysis, we quantify the economic contribution of public libraries. We estimate that Danes put a value on libraries corresponding to a total level of willingness to pay up to DKK 4bn a year for their existence. This is significantly more than the DKK 2.5bn they currently pay for libraries via taxes.

The reason for this high willingness to pay is that libraries fulfil a crucial role as a cultural, social and educational institution. Danes highly value this property and are willing to pay for it. However, value for the population as a whole arises not only when an individual personally uses library services, for example, to borrow books or music. The individual also attaches value to the fact that other people use library services. The willingness of 'non-users' to pay to have a library even if they do not directly use it themselves is a finding that many studies support. The option of being able to use a library if they wanted to is valuable to them, as is others' pleasure in using libraries and the role of libraries as social and culture-bearing institutions.

As an agent of culture, libraries provide Danes with free, easy access to literature, music, talks, courses and more. This means more people read than if there were no libraries, and because libraries also focus on selecting niche, quality literature, more niche literature is being read than if there were no libraries.

Libraries also play a role by offering equal opportunities for people to be active citizens regardless of social and economic differences. People with low incomes and limited education tend to use libraries as a meeting place more than others. Similarly, minority groups use libraries in more ways than non-minority groups, for example, as a physical place to meet. The library's role as a social hub is reflected, for one thing, in the steady rise in library visitors in recent years despite the drop in the number of physical loans. This indicates that the 'physical space' of libraries has a value over and above that represented by the actual loan of books and music, for example.

Of the DKK 4bn that Danish taxpayers are willing to pay for library services, we estimate that just over half – 60 per cent – can be ascribed to the direct pleasure of personal library use. The remainder is due to other people's pleasure and the library's social and cultural function.

Although it may seem surprising that people benefit from and are willing to pay for others' library use, it is not an unusual phenomenon. The same is true for natural areas such as streams, woods and parks and other cultural activities like visiting theatres. As an agent of culture and social relationships, libraries take their place alongside other institutions such as the Danish Broadcasting Corporation and the Royal Danish Theatre, whose value to society relates not only to direct individual use, but also to a broader cohesive function.

Value through reading

However, this 'willingness to pay approach' certainly does not reflect the true economic value of libraries. We have calculated that libraries create value of approx. DKK 2bn of gross domestic product (GDP) annually by strengthening reading skills, mainly those of children. This corresponds to 0.1 per cent of GDP.

This figure does not reflect the cultural and social value of 'benefit and pleasure' for the population as represented by the DKK 4bn already mentioned, but the quite specific contribution of libraries to increasing economic welfare in society, which is what GDP expresses.

Libraries run a range of activities that help foster children's reading, which also includes – very importantly – leisure reading. We find that by stimulating reading skills, libraries increase the likelihood of each child eventually achieving a higher level of education than he or she would have otherwise. More education raises the general level of education in Denmark, which, as we know, leads to higher productivity and pay levels, which in turn increases GDP. We even find certain evidence that library initiatives to improve reading skills can act as a counterbalance for children from homes where reading is not part of the family culture. In other words, this aspect of library services can help children break out of a negative social inheritance.

The DKK 2bn gain in additional annual welfare seems considerable, particularly in light of the fact that, in our opinion, not all libraries fulfil this role to 'perfection'. Rather, the result is a positive offshoot from the basic service of providing a selection of literature and collaborating with schools. This indicates that libraries could refine their services and thus stimulate children's reading more than they currently do, with even higher GDP as a result. An obvious place to start might be their collaboration with schools.

As an interesting aside to the effect of better reading skills, libraries could also act as hothouses for the top entrepreneurs of the future. The opportunity for a young person to become absorbed in or to specialise in a topic or an interest offered by libraries might be just what it takes to nurture the founder of the next Skype or Microsoft.

Value through digital transition

Finally we find that libraries help accelerate the process of digital transition in society, which creates value in the form of savings in the public and private sectors. Libraries' contribution to digitalisation is anchored in the 48,000 Danes who annually get their computer skills upgraded at libraries. This accelerates and eases the transition to a more digital society, generating public savings and private gains equal to between DKK 100m and DKK 200m annually. This figure is subject to significant uncertainty and may be higher. Among other things, it includes neither the value of the half-a-million citizens who get personal help and use the libraries' IT cafés nor of the businesses that also receive help for digital tasks at libraries.

One way for libraries to increase their value to society through the digital transition is to identify those citizens who have most difficulty migrating and would be unable to do so without their help. This is because we believe this group of citizens will delay the process of phasing out public non-digital solutions that will continue alongside the new digital solutions for many years. The public sector simply cannot phase out non-digital solutions as long as citizens are learning to communicate digitally with public bodies. Rather, non-digital systems can only be shut down completely – and major savings realised – once 'all' citizens use digital communication. In fact, we do not know the extent to which libraries have reached citizens with the greatest transitional challenges, but there is probably scope for improvement because libraries are currently not systematically targeting their services at this group. A first step could be to systematically target efforts towards the group with the biggest challenges.

Although the savings to be generated by the digital transition will run into 'hundreds of millions', it is worth asking whether libraries are the right bodies to manage the transition process in future. Libraries are in a good position to tackle this task, having a fine-meshed network of 500 branches all over Denmark that gives citizens and businesses easy access to the help they need. This is probably also one of the main reasons that the Danish Agency for Digitisation and the Danish Business Authority have identified libraries as working partners for the digital transition. However, a strong physical presence does not automatically equate to high quality teaching and consultancy. These require competencies, which, generally speaking, do not necessarily follow from traditional 'core library competencies'. We have no evidence to conclude that libraries will be able to provide help with the digital transition that no one else can offer better or more cheaply: businesses, institutions or authorities whose DNA is more closely aligned to the relevant expertise than that of libraries. Nonetheless, the discussion is relevant in light of the hugely topical question of what exactly are the core competencies of libraries, and the services through which such competencies should be realised.

Overall

We thus find that public willingness to pay for libraries is as high as almost DKK 4bn. Since the public currently pay DKK 2.5bn of this amount annually via taxes, the benefits of libraries outweigh their cost. However, in this surplus, not all costs have been included, as libraries do not operate on full market conditions. Additionally, libraries increase welfare in society.

Our analyses show that, to increase this figure, libraries should consider further enhancing their cultural and social services. Optimising the value of the 'physical space' might be one way of doing so and is an area where libraries already command a strong position. Moreover, further strengthening reading and the educational channel would appear to hold significant potential.

The characteristic feature of both – cultural and social services as well as reading and education – is that they are closely related to traditional library competencies.

If we further extrapolate the dimension 'the future focus of libraries will be on services originating from the core competencies of librarians', our focus falls on the vast volumes of information produced by modern digital society. Today, demand for the ability to find information has been replaced by demand for expertise in tracking down the right information. This means being able to structure information and efficiently build databases and search functions, some of the core competencies of librarians. This is evidenced, for example, by the fact that private companies employing human-centred informatics graduates (formerly library graduates) use them to carry out these sorts of functions. This underscores the existence of a link between information architecture skills and genuine market value because otherwise private companies would not hire them. In fact, about a quarter of the new human-centred informatics graduates find jobs in private companies.

Libraries could possibly exploit these competencies better than is currently the case to create value for citizens and businesses. Many libraries currently offer businesses services that create value through information architecture and information searches. However, we believe most of these services can be honed and more firmly embedded in libraries.

Chapter 1**1 The cultural and social contribution**

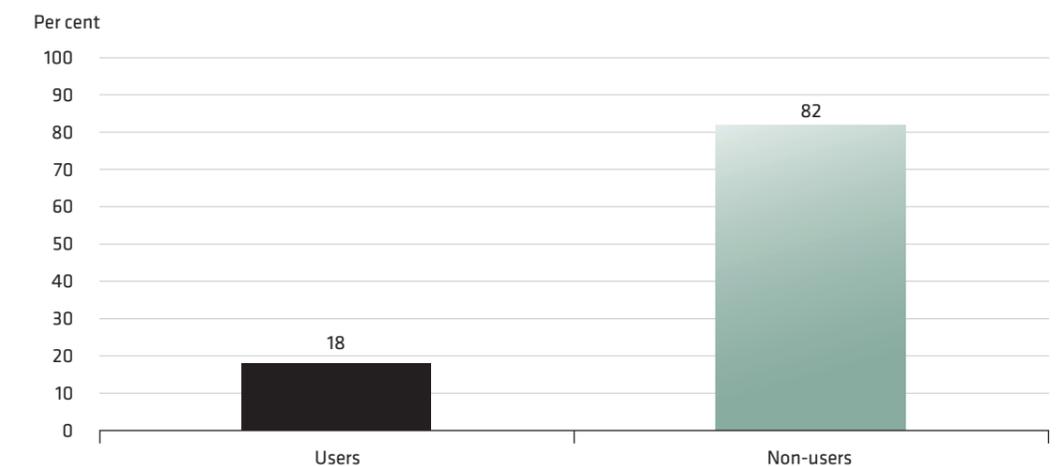
In this chapter we address the economic contribution of public libraries through their cultural and social impact.

1.1 Non-users

To calculate the social and cultural value of libraries, we must first identify the group or groups for which libraries create value. It turns out that it is not only library users who are willing to pay for the existence of libraries. Also non-users value libraries.

This characteristic is absolutely central to the assessment of libraries, and one they have in common with other cultural institutions such as theatres, museums and national monuments. However, more abstract phenomena such as public woods, the Wadden Sea and the cliffs of Møns Klint also share this characteristic. Basically, the reason is that we are dealing with matters that affects us all, even if we rarely use, experience or think about it. Nonetheless, we still believe it should exist and that others should derive pleasure from it. This is precisely true for libraries and plays a decisive role for the quantification of their cultural and social value.

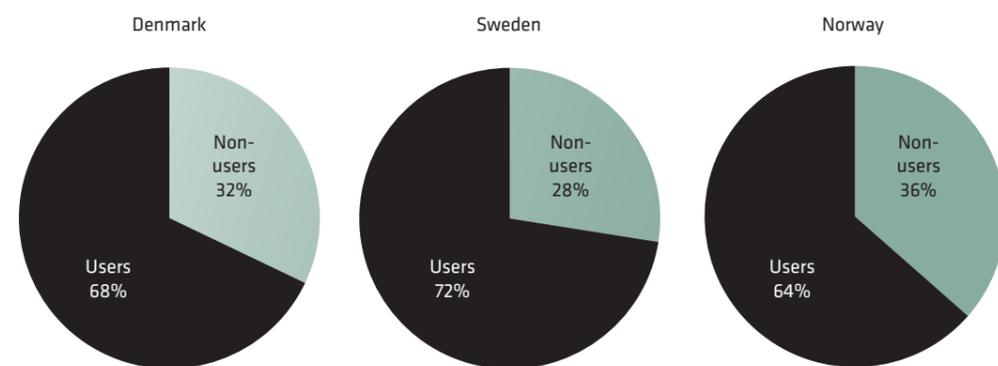
A Danish example of this 'altruistic' point of view is the assessment of the Royal Danish Theatre. A survey of almost 2,000 Danish taxpayers showed that 82 per cent of total willingness to pay came from people who did not use the theatre themselves; see Figure 1. The fact that the bulk of willingness to pay comes from non-users reflects that people can enjoy the benefit of a cultural institution even if they do not use it themselves.

Figure 1 Assessment of the Royal Danish Theatre

Note: Survey of 1,843 Danish taxpayers
Source: Bille Hansen (1996), Danskernes værdisætning af Det Kgl. Teater

As mentioned earlier, the same applies to libraries: we appreciate other people using libraries. Research findings from Denmark, Sweden and Norway all indicate this. If asked whether they think libraries are important, people answer 'yes'. If then asked whether they use libraries, many answer 'no'. This reveals that a large group believe libraries are important although they do not use them themselves. The relevant figures for Denmark, Sweden and Norway are 32 per cent, 28 per cent and 36 per cent of the population, respectively; see Figure 2.

Figure 2 Non-users think libraries are important



Source: Moos-Bjerre (2014) *Fremtidens Biblioteker*, Hoglund (1999) *Bibliotekens Värde*, Reppen (1998) *Bruk av folkebibliotek 1998*

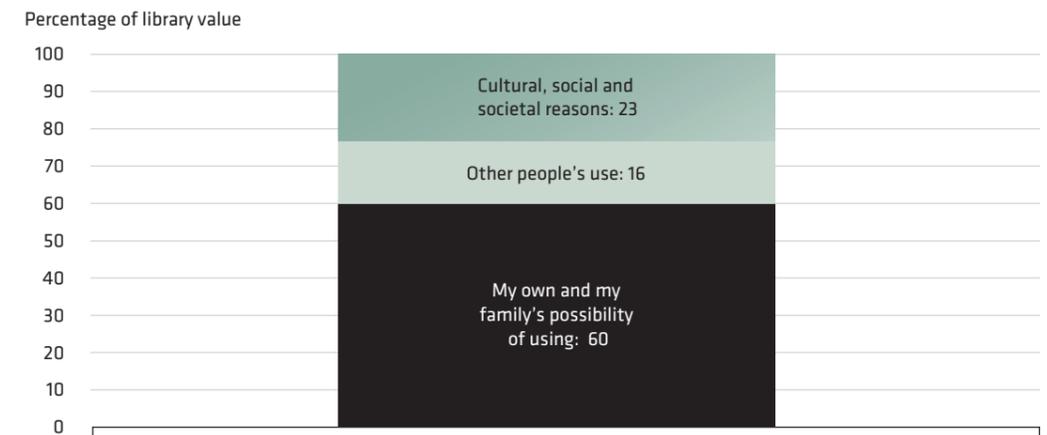
So, overall, we can conclude that non-users' willingness to pay is crucial to the assessment of libraries. This means the total value of libraries cannot be found by merely focusing on the number of visitors, book loans or similar measures. All such approaches ignore the value represented by non-users and thus under-estimate the total value. Non-users should instead be included in the analysis.

1.2 Willingness to pay

There are no Danish studies that estimate the value of Danish libraries for users and non-users. Nor was the intended focus of this report to conduct a willingness-to-pay analysis. However, an extensive Norwegian study has assessed Norwegian public libraries and mapped the motivation underlying the assessment¹. A relevant result of this study is that only just over half of the libraries' value – 60 per cent – is due to the direct pleasure we get from using a library; see Figure 3. The remainder is due to other people's pleasure and the library's social and cultural function.

¹ Aabø (2004) 'The Value of Public Libraries'

Figure 3 Motivation for library assessment



Source: Aabø (2004) 'The Value of Public Libraries'

Figure 3 shows very clearly that the value of libraries stems not only from their benefit for people who often borrow books and music. People who rarely use libraries also set great store by libraries. Cultural and social factors are the chief reason that non-users account for 40 per cent of library value. The survey respondents specifically pinpointed three important roles that libraries play in the cultural sphere²:

1. The role as mediator of culture and knowledge
2. The role as protector of cultural heritage
3. The role as driver for the development of creativity and social cohesion in general.

What is more, the role played by altruism itself is another social factor. It gives us pleasure as citizens when others experience pleasure. The value of this phenomenon is often associated with the weakest members of society and based on core values such as creating free and equal opportunities for everyone.

² Usherwood (2002) 'Demonstrating impact through qualitative research. Performance and Metrics, 3'. Kerslake and Kinnel (1997) 'The social impact of public libraries: A literary review. Boston Spa: British Library Innovation Centre'

We estimate that in monetary terms Danes are willing to pay DKK 3-4bn in tax for public libraries. This figure is based on the Norwegian study and therefore implicitly assumes that Danes and Norwegians value libraries equally highly. Our immediate impression is that the findings are robust relative to Denmark, and this is supported by non-users' almost identical views about the value of libraries; see Figure 2. Apart from the significant similarity of the Danish and Norwegian social model and cultural background, key results from the Norwegian analysis can be found in other analyses, for example, that non-users of various cultural institutions rate them very highly; see Table 1. However, no other analysis is as thorough as the Norwegian.

Table 1 Studies that include non-utility value

Cultural institution	Study	Country	Non-utility value
St. Louis Public Library	Holt et al. (1999)	USA	Need for library contributions from the poor, children and local environment
Lincoln Cathedral	Pollicino and Maddison (2001)	UK	Cultural heritage and culture
Durham Cathedral	Willis (1993)	UK	Preservation
Teatro Colon	Roche Riviera (1998)	Argentina	Preservation value, culture, cultural heritage, prestige
Royal Danish Theatre	Bille Hansen (1997)	Denmark	Cultural heritage, culture, second-hand
Museums	Martin (1994)	Canada	Cultural heritage, preservation value, optional value
National TV	Papandrea (1999)	Australia	National pride, better understanding of the country and the population's lifestyle

Source: Aabø (2004) 'The Value of Public Libraries'

Translating the Norwegian results to Denmark, we discover that an average Danish household is willing to pay between DKK 1,100 and 1,600 annually in tax for library services. If we multiply this figure by the number of Danish households, we arrive at the amount of DKK 3-4bn.

Of this social contribution, 40per cent – corresponding to between DKK 1.2 and 1.6bn – stems direct from the cultural and social impact of public libraries.

1.3 Cultural contribution

Because Danes value reading books themselves and the fact that other people read books, the total value per book read is greater than the personal value for the reader. However, when considering buying a book in a bookshop, we think only of the value for ourselves. From an economic perspective, this behaviour poses a problem, because it leads to fewer books being bought and read – too little culture – relative to the optimum level for society.

For example, a person willing to pay DKK 90 will not buy a book costing DKK 100. If the rest of Denmark (non-users) places a value on this book being read of more than DKK 10, it would make best economic sense to buy and read the book.

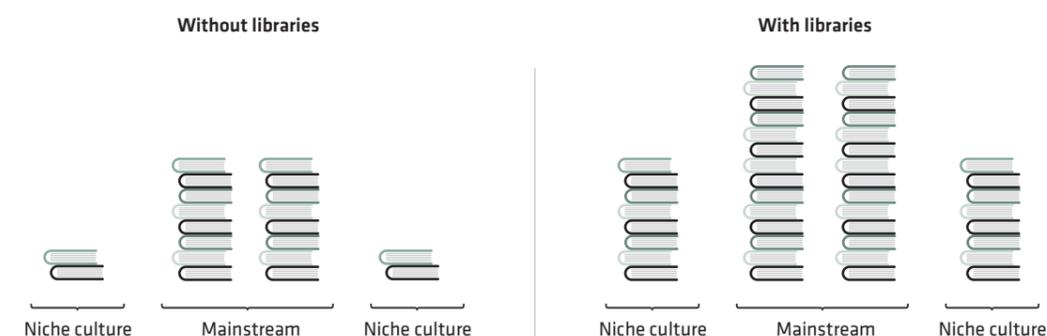
However, the rest of Denmark, the non-users, are not with us in the bookshop and thus cannot exercise their willingness to pay. Therefore in a hypothetical Denmark without public libraries, people will buy and read too few books relative to the optimum level for society.

In economic terms, this means that public libraries – with their free lending – resolve the market distortion that arises in an unregulated market. This market distortion arises because a private book market does not accommodate non-users' willingness to pay, whereas libraries do so by providing 'free culture'.

We have already seen that non-users explain their willingness to pay by highlighting the role of libraries as mediators of culture and knowledge and stewards of cultural heritage. In essence, these statements claim that value largely stems from *the amount of culture* known, enjoyed and offered in Denmark. Public libraries increase the amount of culture in Denmark in a way no other institution does. They even do so in a qualified manner: an expert committee decides what should go on the shelves to produce a balanced selection of mainstream and more niche cultural products. In this context niche culture should be understood as the result of a professional cultural selection process.

This means a Denmark without public libraries would be a culturally poorer Denmark. We have tried to illustrate this point in Figure 4, where books represent *culture*, and the height of the book stacks represents *amount*.

Figure 4 Culture in Denmark with and without libraries



Source: Copenhagen Economics

1.4 Social contribution

The library as meeting place plays a significant role by offering equal opportunities for people to be active citizens regardless of social and economic differences³. This is illustrated by the positive correlation found by several studies between low income and limited education and use of libraries as meeting places.

Specifically, this means that non-ethnic Danes use libraries more frequently than the population as a whole. In fact, 36 per cent of non-ethnic Danes visit the library at least once a month or more, while the figure for the population as a whole is 25 per cent. This corresponds to almost 1½ times more visits. These figures are from 2012, and the same trend was observed in 2004⁴. This therefore appears to be a robust result.

A similar picture emerges in the other Scandinavian countries, where people from other cultural and linguistic backgrounds use libraries in more ways than the indigenous population⁵.

Conversely, non-ethnic Danes make less use of arts and culture activities such as theatre, museums and concerts. Libraries are therefore among the cultural institutions that are particularly successful at attracting non-ethnic Danes.

The chief reason that non-ethnic Danes use libraries more is not books, music or audio book loans. Nor is it talks or musical events. In fact, non-ethnic Danes are less active in all these areas than the rest of the population. The higher visit frequency is driven primarily by two factors: use of the library's facilities – newspapers, photocopiers and computers – and 'other things' such as the library's being a pleasant place to be and in connection with meetings. Six per cent give the reason as 'coming to meet others' (for example, in the café and for social events), which is twice as high as for the rest of the population⁶.

Although these are not the only reasons for a library visit, they indicate that libraries are attractive because they offer a safe, inclusive space, particularly for non-ethnic Danes and probably also for the population segment with low incomes and limited education. Libraries thus create cohesion by promoting integration and providing space for society's most disadvantaged members. At the same time, the above correlations underpin a need for libraries as a physical space and meeting place that cannot be quantified by the number of book loans, a finding confirmed by the consistent visitor figures despite declining loans; see Figure 5.

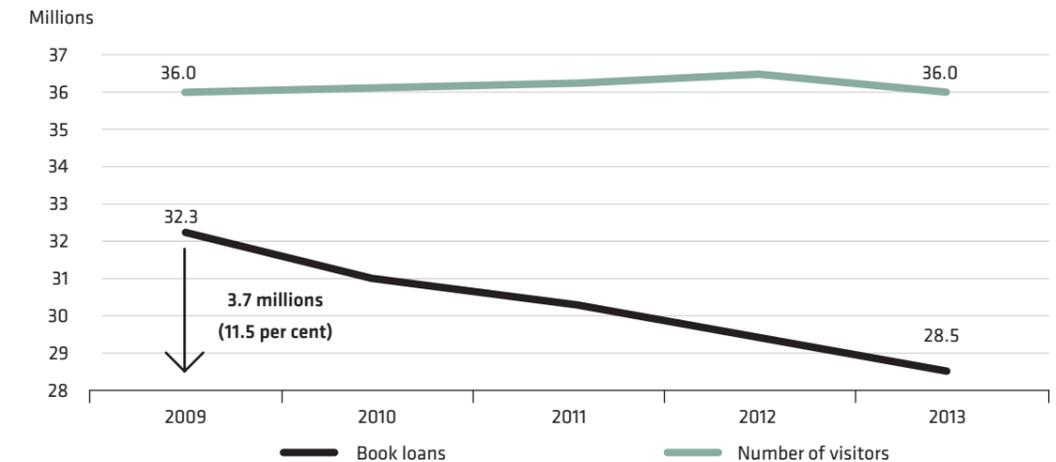
3 Aabø, S., Audunson, R. & Vårheim, A. (2010) 'How do public libraries function as meeting places?'

4 Danish Ministry of Culture (2012) 'Danskernes kulturvaner'

5 Hvenegaard Rasmussen og Høirup (2000) 'Kulturinstitutionernes bidrag til det kulturelt mangfoldige Danmark: en undersøgelse af kunst- og kulturformidlingsinstitutioners tilbud til og inddragelse af de etniske minoriteter'

6 Danish Ministry of Culture (2012) 'Danskernes kulturvaner'

Figure 5 Number of visits and book loans



Source: Statistics Denmark

In a focus group interview the residents of Oslo – users and non-users alike – emphasised the importance of the library's role as a meeting place and arena for integration that promotes community feeling and creates a place that can help develop local identity⁷.

The conclusion of a literature study of libraries' role in creating social capital is that libraries enjoy great trust as a social institution and provide a unique meeting place for everyone. They also play a significant role in creating social capital – for individual citizens as well as collectively, institutionally and locally⁸.

A quotation from a UK survey states that: "although a user may actually not talk to anybody during their visit to the library, the feeling of community can still be strong, encouraging a sense of belonging and solidarity"⁹.

1.5 Summary

Offering a diversity of cultural and social events, libraries fulfil an important role in the cultural and social sphere. In this chapter, we have described the impacts from an economic perspective.

Overall, we find that libraries contribute an amount corresponding to DKK 3-4bn from social and cultural impacts. This value reflects not only people's own possibility for using library services, but also the value accounted for by non-users as well as the general public perception of the cultural and social value of public libraries for society.

7 Audunson and Aabø (2013) 'Biblioteket som motor i å skape lokalsamfunn med sammenhengskraft i en flerkulturell storbykontekst'

8 Nagel Delica (2013) 'Biblioteker og sosial kapital'

9 Goulding (2005) 'A community forum: UK public libraries as meeting places'

2 The educational contribution

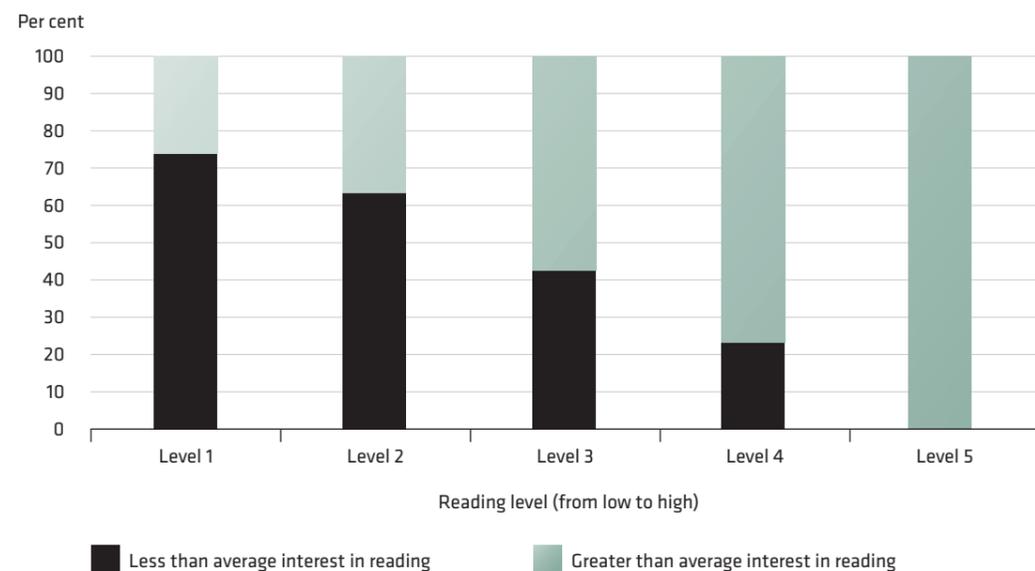
In this chapter, we address public libraries and their economic contribution as a result of higher educational level.

2.1 Reading skills

Children who read in their spare time are better readers than children who do not. This clear correlation is well-documented by PISA surveys in Denmark, the Nordic region and the OECD countries generally¹⁰. The PISA test measures children’s reading skills on a scale from 0-1,000 points that places children at different reading levels.

The PISA survey shows that Danish pupils who are keen readers read considerably better than those with little interest in reading; see Figure 6. The majority of the pupils scoring lowest on the reading scale – reading levels 1 and 2 – are pupils who have a less-than-average interest in reading. Conversely, the majority of the pupils scoring highest – reading levels 4, 5 and 6 – are pupils whose interest in reading is greater than average. The group of highest-scoring pupils – reading levels 5 and 6 – includes no pupils with a less-than-average interest in reading.

Figure 6 Correlation between interest in reading and reading ability



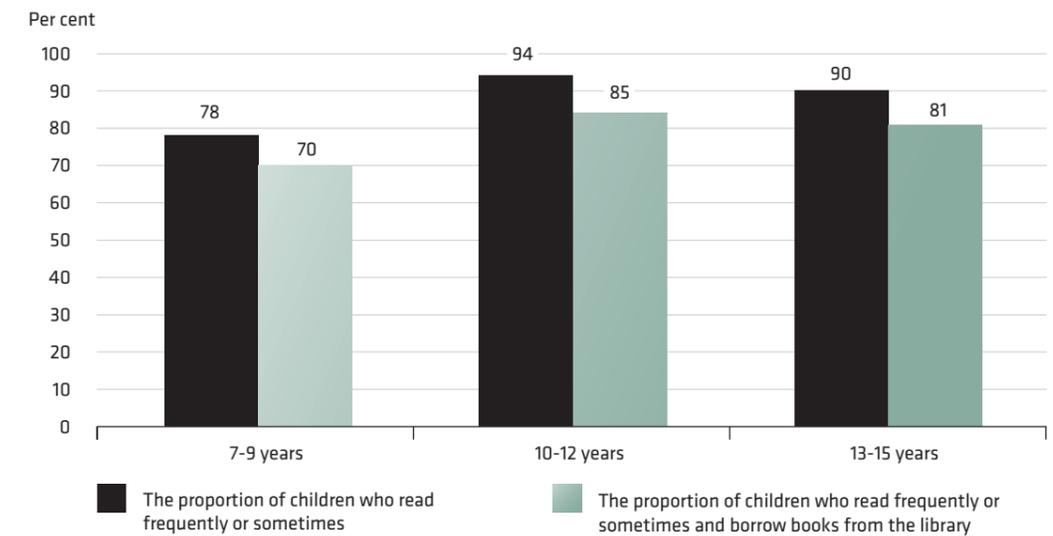
Note: Level 1 covers level 1 a and below. Level 5 also includes level 6, which comprises less than 1 per cent of pupils, however.
Source: PISA (2009) 'Danske unge i en international sammenligning'

¹⁰ PISA (2009) 'Danske unge i en international sammenligning'

Pupils who read for at least half an hour a day score on average 47 points higher than pupils who do not read in their spare time (512 and 465 points, respectively). This difference in reading skills is statistically significant and reflects the close correlation between leisure reading and significantly improved reading ability in children.

Libraries account for a considerable portion of this leisure reading. In Denmark, the great majority of children read often or sometimes, and the great majority of this group borrow books from the library; see Figure 7. At national level, this corresponds to 470,000 active child readers aged 7-15 taking out reading materials from the library annually.

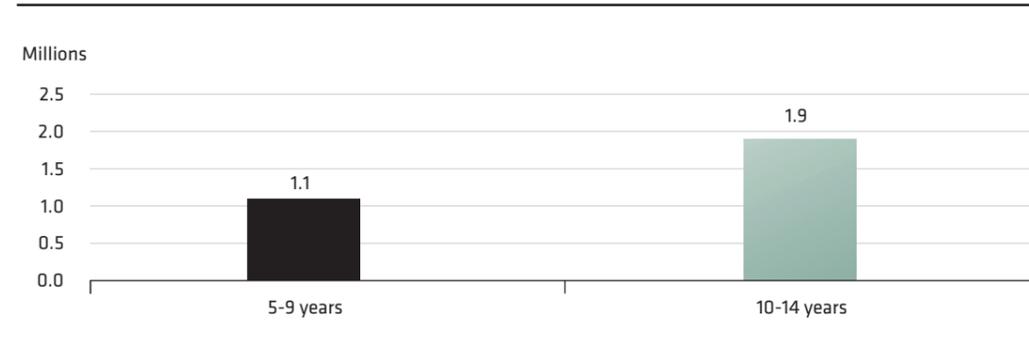
Figure 7 Children who read in their leisure time borrow library books



Source: Copenhagen Economics, based on 'Danskernes kultur- og fritidsaktiviteter 2004 og 2012'

Library book loans to children thus contribute significantly to children’s leisure reading. Figures from Statistics Denmark show that 5-9-year-olds borrowed over 1m library books in 2013, while 10-14-year-olds borrowed almost 2m; see Figure 8. This means that 5-9-year-olds borrow an average of three library books a year, while 10-14-year-olds borrow six. As this is an average calculation including all children in the age group, there will thus be some children who never borrow library books, and some who borrow far more than three to six a year.

Figure 8 Library loans to children



Source: Statistics Denmark

If we ask Danes themselves, we are in no doubt about the importance they attach to libraries with respect to developing reading ability and the probability of completing a course of education; see Box 1.

Box 1 Danes attach great importance to libraries

The population of Denmark believes libraries play an important role in teaching children and adults reading skills and helping them to complete a course of education.

This has been proved by numerous surveys conducted by Moos-Bjerre for the Danish Library Association. Moos-Bjerre has carried out extensive qualitative interviews showing that:

- 93 per cent of the population assess that libraries contribute to children’s interest in reading. 76 per cent additionally believe libraries contribute positively to encouraging people to read generally and 51 per cent have direct personal experience of libraries sparking their desire to read. This is particularly pronounced among the younger and older population segments, with 58 per cent of 15-19-year-olds and 64 per cent of the over-70s having experienced that a library has encouraged their desire to read.
- 74 per cent of the population believe libraries have helped them with their schooling and further education, and 36 per cent assess that libraries have had a direct importance for their completion of a course of education. This is particularly pronounced among people with a higher secondary, medium-term or higher education, and younger age groups, where 62 per cent of 15-19-year-olds and 64 per cent of the 20-29-year-olds point out that libraries helped them complete their schooling or further education.

Source: Moos-Bjerre (2014) 'Fremtidens Biblioteker' and Moos-Bjerre (2011) 'Rapport Danskernes holdning til biblioteker 2011'

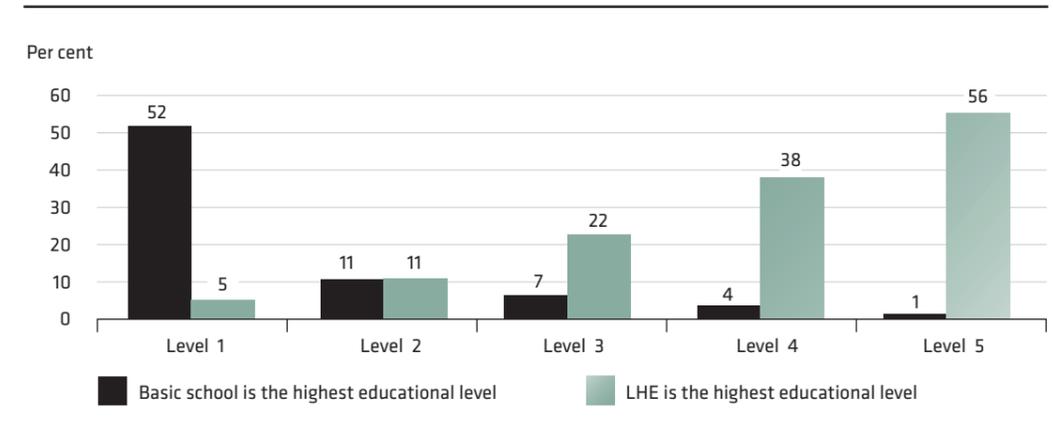
Overall, therefore, we find that leisure reading increases pupils’ reading skills and that libraries account for a considerable portion of this leisure reading. This means that libraries contribute to improving children’s reading skills. We will build further on this finding in the next section where we look specifically at reading skills and the correlation with educational level.

2.2 Educational level

Good reading skills increase the probability of young people completing a course of education. Only 5 per cent of the pupils with the poorest reading skills at age 15 (level 1) were taking or had completed a long-term course of higher education at the age of 27. On the other hand, 56 per cent of the pupils with the best reading skills (level 5 and 6) were enrolled in or had completed a long-term course of higher education at the age of 27; see Figure 9.

If we look at the probability of having lower secondary school as the highest level of education achieved, a similar pattern clearly emerges. Over half of the pupils scoring lowest on the reading scale (level 1) left school during or just after lower secondary school. Only 1 per cent of the highest-scoring pupils left school after lower secondary school.

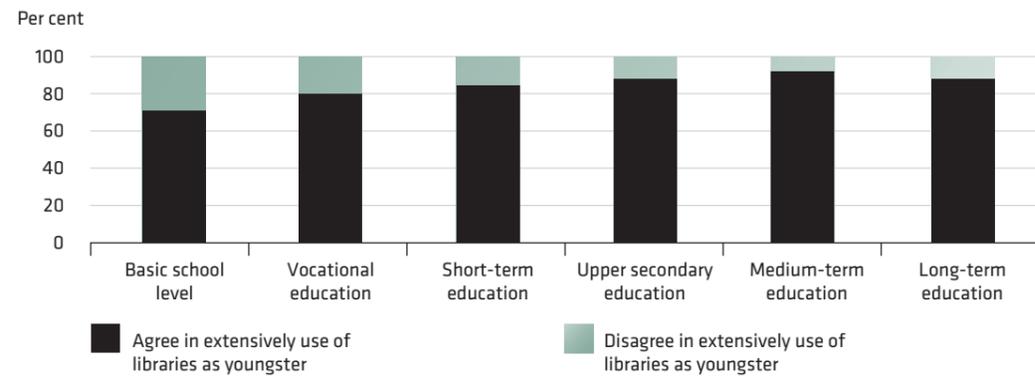
Figure 9 Correlation between reading ability and educational level



Note: LHE = Long-term higher education
Source: SFI (2014) 'Fra 15 til 27 år - PISA 2000-eleverne i 2011/2012'

Since good reading skills derive in part from public libraries, we can also expect a positive correlation between library use as a child and educational level as an adult. A survey, 'Bibliotekernes uddannelseseffekt', conducted by Moos-Bjerre for the Danish Think Tank Libraries of the Future, confirms this specific correlation: children who use libraries are more likely to complete a course of education later in life; see Figure 10. Of Danes who have completed long-term higher education, 88 per cent agree that they used libraries extensively as children, while for Danes who completed primary school the percentage is 71.

Figure 10 Library use and educational level



Note: Agree and Strongly Agree are grouped together under Agree. Disagree and Strongly Disagree are grouped together under Disagree.
 Source: Moos-Bjerre for the Danish Think Tank Libraries of the Future: The Educational Impact of Libraries (2014)

Using the results of the above figure, Moos-Bjerre carried out a statistical analysis in 2014 in an attempt to isolate the impact of libraries on level of education. For despite the fact that interviews show a clear positive link between using libraries in childhood and higher adult education, it does not automatically follow that there is a direct causal relation – it may be that the children who often use the libraries come from homes with highly educated parents, which explains why the child pursues higher education. In the study, Moos-Bjerre takes into account the parents’ education and the age and sex of the individual, concluding that library use has a statistically significant positive impact on educational level. This seems logical, as more reading, regardless of reason, increases the likelihood of pursuing higher education. Specifically, Moos-Bjerre finds that being a library user as a child increases the likelihood of taking a higher education after school by 7-9 per cent.

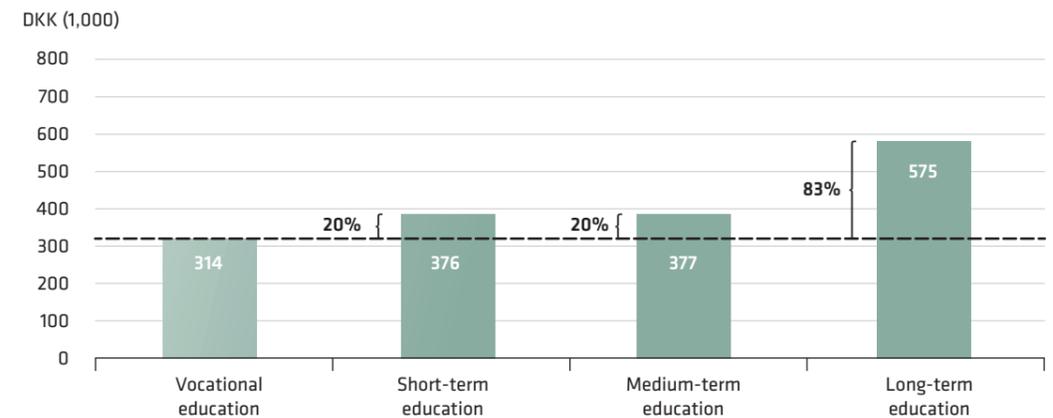
Moos-Bjerre’s findings point to an important trend and emphasise that libraries – through their contribution to increased reading skills – help to raise the level of education in Denmark. And because the study takes the parents’ education into account, it shows that the libraries can help to break down the negative social inheritance syndrome.

2.3 Productivity

A high level of education is of great economic benefit, as the greater the number of highly educated people, the higher the productivity of the workforce, which in turn results in greater productivity in Denmark.

Productivity gain is expressed through wages. We know that higher productivity leads to higher wages. People with a higher education earn, on average, higher wages; see Figure 11. On average, a person with a long-term higher education earns DKK 575,000 per annum, while a vocationally trained person earns DKK 314,000 per annum. In other words, the highly educated person earns, on average, 83 per cent more, which represents a significant educational benefit.

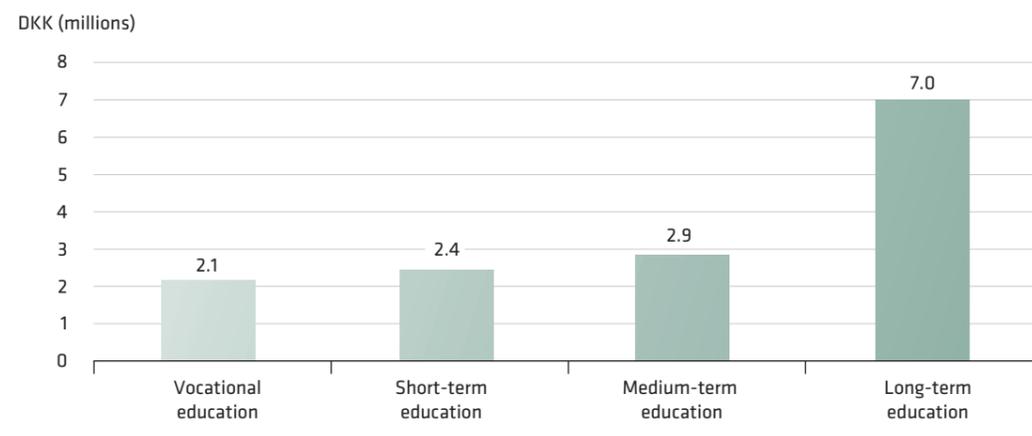
Figure 11 Correlation between education and annual income



Note: Annual wages in 2011
 Source: Statistics Denmark

Figure 11 illustrates a correlation based on figures from Statistics Denmark. The correlation indicates a positive effect, but much of the difference is also explained by ability. On average, talented, hard-working individuals will tend to earn more irrespective of education.

The Economic Council of the Labour Movement (ECLM) conducted a study to isolate the impact of education on pay in order to calculate the isolated economic impact of education. The study shows an economic gain of DKK 7m viewed over the lifetime of a single person with a long-term higher education; see Figure 12. By comparison, the gain is DKK 2.1m for vocational training. Both express an additional gain in relation to a basic level of education and show the major economic impact of education.

Figure 12 The economic impact of education

Note: The social benefit is found by offsetting the cost of education against the benefit society derives in the form of taxation, for example – compared with people with only basic school education – taken over a lifetime.

Source: Copenhagen Economics based on the Economic Council of the Labour Movement (2006)

The above figures are of key importance when it comes to assessing libraries' economic contribution. By raising the general level of education, libraries make a positive economic contribution. In the next chapter, we will quantify this contribution in monetary terms.

2.4 Economic effects

We have now established three key correlations which together imply that the libraries generate economic value through education:

1. Libraries improve children's reading skills
2. Better reading skills directly affect educational level
3. A high level of education produces greater economic benefit

Adding these three effects together, we can calculate libraries' economic impact through education in monetary terms. While impacts 2 and 3 are quantified in studies and therefore relatively simple to calculate, we must make an important assumption with regard to impact 1.

A key assumption is namely precisely how much leisure reading can be ascribed to libraries. The challenge here is that, as far as we are aware, no studies have calculated this figure. According to data from Statistics Denmark, children and young people borrow between 1 and 2m books a year from libraries; see Figure 8. At the same time, we know from the cultural habits study that between 78 and 90 per cent of children and young people occasionally read in their spare time; see Figure 7. Ideally, we want to know how much of this leisure reading comes from material borrowed from libraries or reading inspired by libraries¹¹.

¹¹ E.g. if the librarian recommends reading a website etc.

The study that comes closest to containing this figure is one carried out by Trine Bille et al (2004), which asks children and young people who read in their spare time where they get their books from. The study reveals that 89 per cent of those who read in their spare time occasionally borrow books from the library and 30 per cent have parents who borrow books from the library for them; see Table 2.

Table 2 Where do children who read in their spare time get their books from?

Options	Per cent
They borrow them from the library	89%
The parents borrow them from the library	30%
Borrow them from friends	22%
Buy their own books	48%
Receive books as gifts	82%
Other	25%

Note: As the respondents were allowed to cross off several response categories, the total sum exceeds 100 per cent. The respondents have answered whether they sometimes do one or more of several things. The age group is 7-15-year-olds

Source: Copenhagen Economics based on Trine Bille et al (2004)

The study also shows that children get their books from a multitude of sources. In addition to libraries, they buy books themselves, receive books as presents and borrow books from friends. If we look at the share of respondents who cite the library as their source of leisure time reading material in relation to the overall total, it corresponds to a figure of 40 per cent of leisure reading attributable to the libraries.

The figure of 40 per cent is contingent on a uniform quantitative distribution across the different response categories. Similarly, not all types of leisure reading are included in the table. For these reasons, the figure of 40 per cent is subject to a certain margin of error.

PISA (2009) has shown that leisure reading improves children's reading skills and that library books account for a significant part of this leisure reading. On the basis of this premise, we can calculate the effect of library-driven leisure reading on level of education using the study by the Danish Institute for Local Government Research (AKF), which shows that improved reading skills increase the likelihood of taking an education. Coupled with the economic impact of education, we end up with an estimate of how much the libraries contribute towards education. The calculation is explained step by step in Box 2.

Box 2 Calculating the economic impact**Step-by-step calculation:**

1. Our calculation is based on a PISA survey in 2009, which shows that the 67 per cent of the OECD pupils who read in their leisure time score 47 points higher on average on the PISA reading scale. A Danish survey of the cultural habits of children and young people in 2004¹² shows that between 78-94 per cent of 7-to-15-year-olds sometimes read in their leisure time. Against this background, we find it reasonable to assume that the leisure time reading of Danish youngsters is on a par with the OECD average of 67 per cent. In Denmark, a significant part of this leisure reading is attributable to books borrowed from public libraries, previously calculated to be 40% and subject to a certain margin of error. In order to account for estimation uncertainty we make an overall division by a factor of two and view this as a conservative estimate.
2. Next, we make use of the fact that the Danish Institute for Local Government Research (AKF) has estimated the link between reading skills and the probability for education. The Danish Institute for Local Government Research (AKF) has found that a 1 point increase in reading skills increases the likelihood of taking an education by 0.4 per cent.
3. We then convert the probability of taking an education into monetary terms based on figures from the Economic Council of the Labour Movement. The Economic Council of the Labour Movement has shown that the economic impact of education is a minimum of DKK 2.1m per person. DKK 2.1m is the economic impact of vocational education and we have chosen this as a lower estimate for the average economic impact of education.
4. By linking all these surveys together, we achieve a total effect of DKK 2bn annually. Linking consists of calculating the economic contribution as a result of the higher probability of taking an education due to libraries. The economic contribution of libraries on an individual's education is expressed as effect over an entire lifetime. The libraries give each student year an economic benefit through the education effect, and as all the student years in the labour market have received this contribution from the libraries and new student years are added each year, the effect is annual.

Source: Copenhagen Economics

2.5 Summary

Overall, we find that the libraries contribute DKK 2bn annually through higher education productivity gains. The contribution is the result of three interrelated effects. First, libraries help to improve children's reading skills. Second, improved reading skills increase the likelihood of pursuing higher education. Finally, higher education means higher productivity and thus a positive economic impact. If we calculate the quantitative impact step by step, we end up with DKK 2bn.

¹² Trine Bille, m.fl. (2004) 'Danskernes kultur- og fritidsaktiviteter 2004 - med udviklingslinjer tilbage til 1964'

3 The digitalisation contribution

In this chapter, we address the public library's economic contribution towards increased digitalisation in society.

3.1 Digitalisation

There are significant social benefits associated with increased digitalisation. Digitalisation gives citizens and businesses new and more effective ways of communicating with authorities and each other. Seen from an economic perspective, digitalisation in general has two positive effects: public savings and personal financial benefits. The benefits are so substantial that the Danish government has set up an agency, the Danish Agency for Digitalisation, whose sole purpose is to increase digitalisation in society.

The public savings take the form of lower administrative expenditure. This applies in particular to staffing expenditure as well as direct production costs such as postage when sending physical letters. Savings are achieved in areas where citizens, as an alternative to turning up in person at a citizen service centre, can avail themselves of the digital self-service at lifeindenmark.borger.dk¹³.

For example, registering a change of address in person at a citizen service centre is up to 30 times as expensive compared with using the self-service online function. Similarly, it costs the state DKK 100 to process a paper form, while the cost is DKK 5 if the person completes an electronic form.

The Danish Agency for Digitalisation assesses that the transition to email and digital communication between authorities and citizens will generate overall savings of approx. DKK 1bn per year¹⁴.

On top of this come the personal finance benefits as citizens save time and money when communicating with authorities, banks and others.

Achieving savings of DKK 1bn per year will require a considerable effort. While the Danish Agency for Digitalisation has a target of 80 per cent of all enquiries to authorities to be digitalised in 2015, the figure was only 40 per cent in 2012. To achieve this target, digital communication must therefore be doubled in the period from 2012 to 2015. This is where libraries have a role to play as digital catalysts.

¹³ This website is a common public portal for people living and working in Denmark, offering practical information about life in Denmark and self-service options

¹⁴ Rambøll (2010) 'Business Case, Digitalisering af offentlige breve og dokumenter'

3.2 Economic effects

Through increased digitalisation, libraries help to generate both public savings and private gains. Through courses in digital tools, they give citizens the opportunity to improve their digital skills, which in turn eases the transition to the digital society.

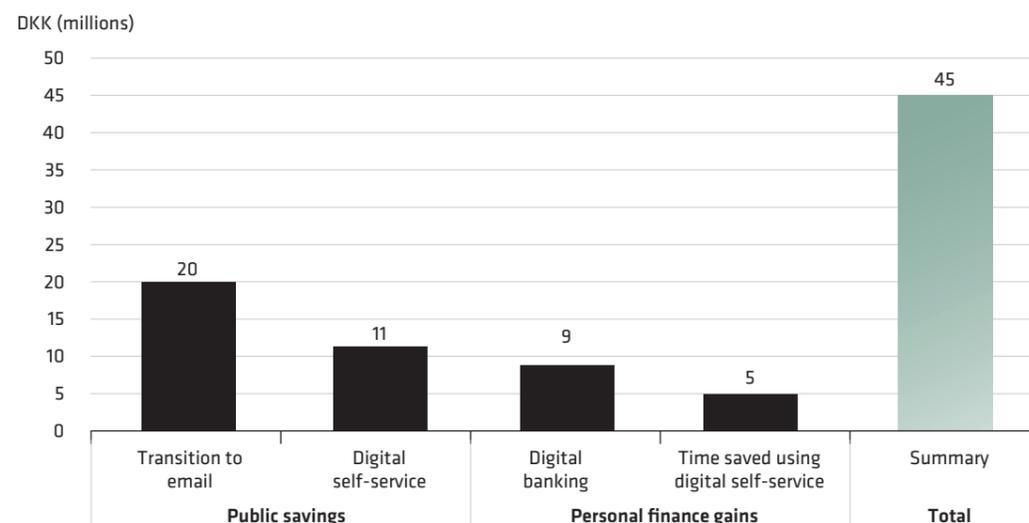
Every year, the libraries help approx. 48,000 citizens to develop the necessary digital skills through courses. This corresponds to 1.1 per cent of Danes over 18¹⁵.

In our opinion, the libraries' most important economic contribution in terms of digitalisation is made through four channels.

1. Public savings from the transition from post to email communication
2. Public savings from digital self-service
3. Personal finance gains as a result of increased use of online banking
4. Personal finance gains in the form of time savings associated with digital self-service.

When we add up the effect of the libraries' contribution to digitalisation through these four channels for 48,000 citizens who complete the courses in a single year, we end up with a total economic value of approx. DKK 45m; see Figure 13.

Figure 13 The libraries' contribution to digitalisation gains



Source: Copenhagen Economics based on data from the Ministry of Finance, the Danish Agency for Digitalisation, Odense Municipality, Randers Municipality, DTU Transport

¹⁵ Copenhagen Economics based on data from Statistics Denmark, City of Copenhagen, Roskilde Municipality and Odense Municipality, data for 2012 and 2013. The calculation is based on actual course participation statistics in the three municipalities and scaled to the rest of the country on the basis of data from Statistics Denmark.

The social benefits related to these course participants will, however, also exist the year after – just as course participants from the year before will derive benefit from the course and thus contribute towards the value to society. The value of DKK 45m is merely an expression of the annual value *for a single year of course participants*, while the total annual value is somewhat larger as a result of this 'snowball effect' from previous course groups.

In order to quantify the total annual value in monetary terms the size of this snowball effect must be estimated. If one year of course participants generates DKK 45m of value in year 1, the same year will, in principle, also generate DKK 45m in year 2. In other words, DKK 45m in savings a year from just one cohort. In year 2, where two cohorts of course participants have been through the course, the savings will have doubled to DKK 90m, and tripled to DKK 135m in year 3 etc.

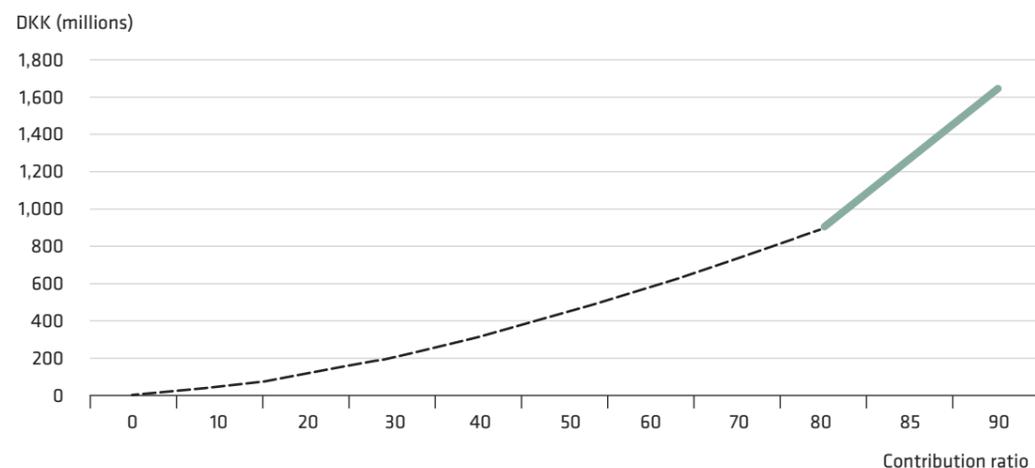
However, this assumes that the snowball effect never dies out, i.e. that these course participants would never have acquired the same skills in any other way. This is unrealistic, as it is only reasonable to assume that the course participants at some time or other would acquire digital skills even without the libraries' courses as a result of society's general focus on digitalisation. Acquiring these skills in this way might take longer than via courses, which means that the libraries' contribution first and foremost should be seen as an acceleration of the digital transition process. The snowball effect would therefore die out at some point.

There is no evidence to suggest exactly how long the snowball effect lasts. Libraries began offering more courses in digital tools and in particular, digital self-service, NemID etc. in 2011¹⁶. This means courses have been offered for three to four years. If we assume that the snowball effect lasts three to four years corresponding to participants having acquired the skills anyway after three to four years, then we end up with a total annual effect of approx. DKK 150-200m.

The calculations for each of the four gains are based on an average. However, major savings are typically achieved by moving marginalised citizens from one system to another without needing to keep key elements of the two systems running concurrently. This means that the savings will be less than average initially and significantly greater towards the end.

This phenomenon is supported by the Danish Agency for Digitalisation's business case model for the transition to digital mail. The model shows that the savings rise sharply in connection with high levels of contribution ratio. Moving the last 20 per cent gives a total savings of DKK 1.5bn a year, while the middle 20 per cent saves the state DKK 0.25bn. In other words, the savings are six times greater for the final 20 per cent; see Figure 14.

¹⁶ Copenhagen Libraries and Roskilde Libraries. It should, however, be pointed out that libraries have actively supported public self-service solutions since the inauguration of lifeindenmark.borger.dk in 2007 and have offered different IT courses since the advent of the internet in Denmark in the latter half of the 1990s.

Figure 14 Major gains from the digitalisation of marginalised citizens

Source: Copenhagen Economics based on the Danish Agency for Digitalisation's model for calculating the savings from the transition to email

If library courses and assistance succeed in increasing the digital competencies of marginalised citizens, the contribution from libraries would be greater than in our calculations. The DKK 45m should therefore be viewed as a conservative estimate and one which also shows that library courses generate a greater economic effect the more libraries succeed in attracting citizens most challenged by the digital revolution.

There are a number of other reasons that we view our digitalisation contribution estimate as conservative. Libraries also provide individual help to citizens through IT cafés as well as helping businesses and associations, for example. Other surveys documenting libraries' contribution towards digitalisation show that over time a substantial number of Danes have received help from the libraries. Thus, 13 per cent of respondents in a survey from 2014 say that they have received help from libraries in using digital services, corresponding to approx. 500,000 citizens¹⁷. In the past two years, libraries have also provided assistance to businesses and associations on approx. 15,000 occasions. These contributions do not figure in this report.

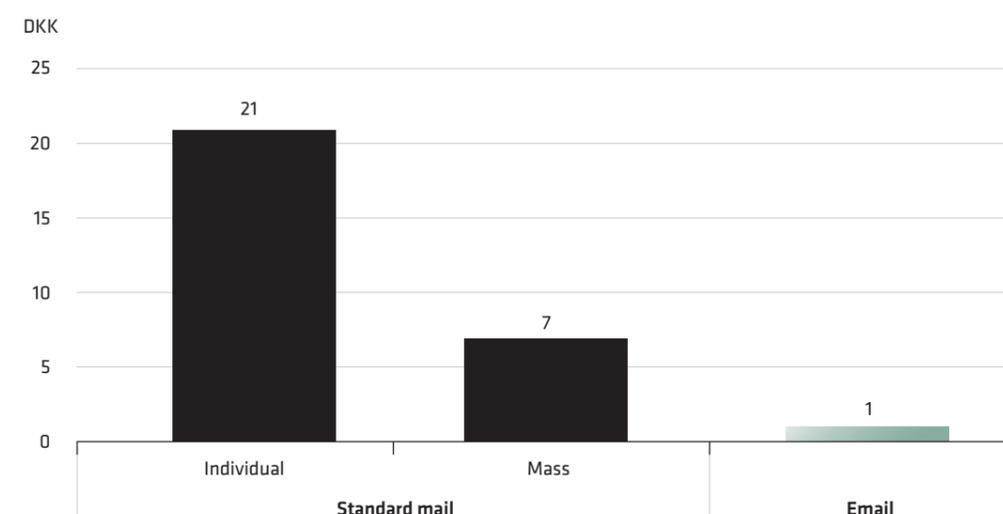
In the following, we describe in detail the calculation of each of the four gains.

1. Public savings from the transition from post to email communication

In Denmark, the public authorities annually send out 126 million letters to citizens and businesses¹⁸. The Ministry of Finance has calculated that the authorities, on average, can save roughly DKK 6 per mass mailings and approx. DKK 20 per individual mailings by using digital mail; see Figure 15.

¹⁷ Moos-Bjerre Analysis (2014) – Denmark's Library Association's Opinion Poll 2014

¹⁸ The Danish Agency for Digitalisation

Figure 15 Costs of standard mail vs. email

Source: Copenhagen Economics based on data from the Danish Agency for Digitalisation

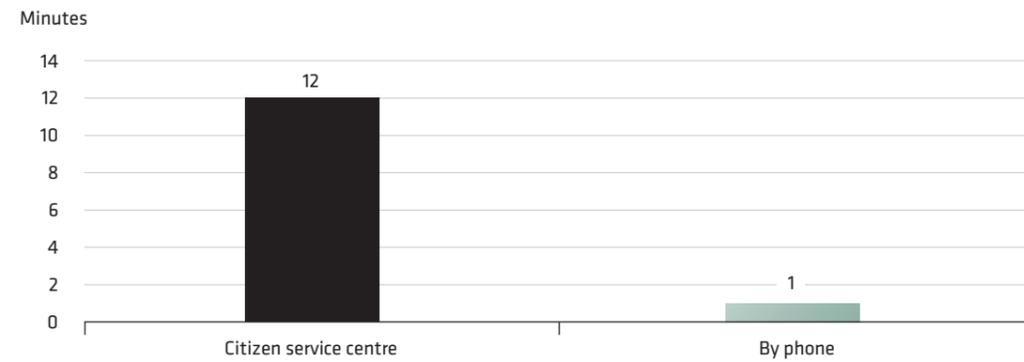
The savings achieved by email is only realisable when citizens can go over to using digital mail without experiencing problems. The need for extra assistance, such as telephone support, will undermine the savings potential.

About 1.1 per cent of the population, corresponding to 48,000 citizens, annually receive assistance to develop their digital competencies through the libraries. Thus the libraries' contribution to public savings from the transition to email amounts to approx. DKK 20m.

2. Public savings from digital self-service

Library courses in digital competencies mean that citizens will have fewer interactions with the authorities (by phone and citizen service centre), which also translates into savings for the state.

Traditional citizen contact is time consuming. Dealing with an in-person visit and citizen service enquiries over the phone takes on average 12 minutes and 0.43 seconds, respectively; see Figure 16. By helping 48,000 citizens annually, libraries help to reduce both the number of enquiries and the average processing time.

Figure 16 Staff time consumption in connection with citizen service

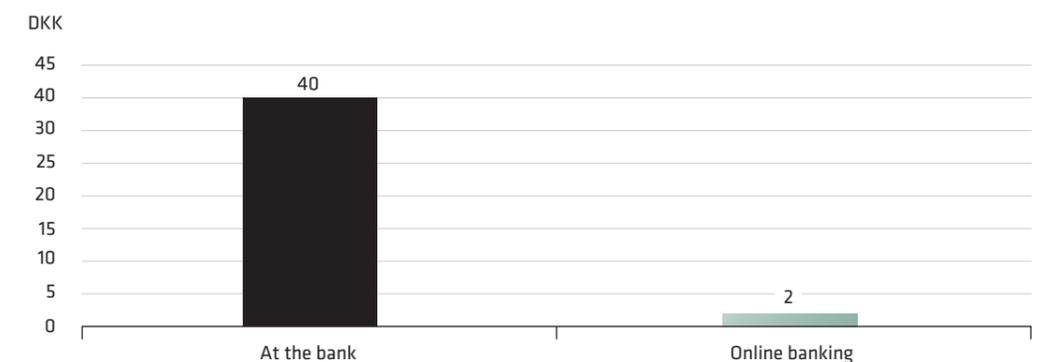
Source: Odense and Roskilde Municipalities

We calculate the effect of reducing, on average, in-person visits to three per year for each of the citizens that have received help. We assume that citizens will still require one phone contact with the citizen service centre. This corresponds to savings of approx. 29,000 hours of staff time. This is a conservative estimate, as Danes who do not use digital solutions can expect to have significantly more contact with the public authorities than three in-person visits and one phone contact. Converted into standard hourly rates, this corresponds to libraries contributing approx. DKK 11m in public savings as a result of digital self-service.

3. Personal finance gains as a result of increased use of online banking

In 2012, 30 per cent of all payment slips were paid at post offices or banks¹⁹. On average, payments made at a bank cost DKK 40 while digital payments cost only DKK 2; see Figure 17. By upgrading digital competencies, libraries are helping to reduce the number of payments using payment slips, thus contributing directly to personal finance gains.

¹⁹ SAS (2012)

Figure 17 Price using payment slips

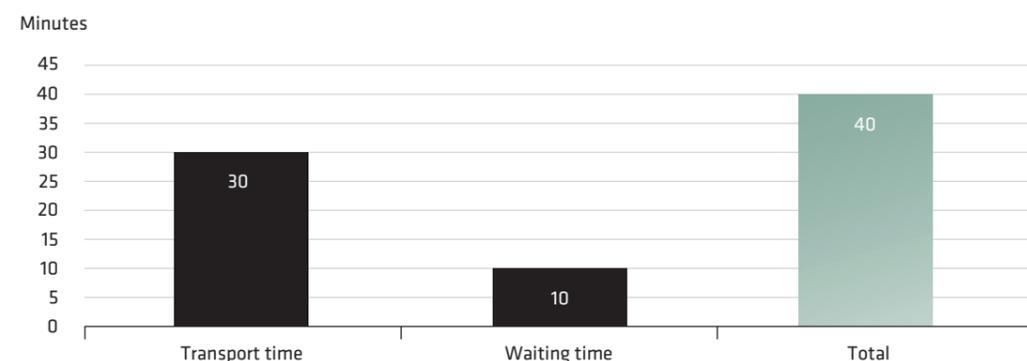
Source: Danske Bank

If the libraries' contribution towards digital self-service reduces the number of in-person payments for those citizens who have received assistance corresponding to 70 per cent digital payments by an average citizen, the number of payments at a post office or bank will be reduced by a further 0.7 percentage points. This translates into citizens making approx. 270,000 fewer payments with payment slips at post offices or banks. This means that each person who has attended one of the libraries' digital courses, on average, makes six fewer payments with payment slips at the bank or post office. The total savings for the group in question is thus DKK 9m in a single year.

In this calculation, we have not factored in the amount of time saved as a result of online payments, which means that our estimate is probably slightly conservative.

4. Personal finance gains in the form of time savings associated with digital self-service

An important benefit of digital self-service is that it allows citizens to exchange information with public authorities from the comfort of their home. When citizens avail themselves of online services or pay bills using online banking instead of paying them at a bank or post office, they save not only time, but money – partly in the form of transport, partly in the form of waiting time; see Figure 18.

Figure 18 Time saved using lifeindenmark.borger.dk

Source: Copenhagen Economics based on data from Odense Municipality, Roskilde Municipality, Randers Municipality and DTU Transport

Using the 48,000 Danes who receive digital self-service assistance each year as our point of departure, we have calculated the time savings associated with citizen service centre waiting and service times, phone assistance and transport to the citizen service centre. We assume that this group of citizens will still need one in-person visit per year to the citizen service centre, as not all services have become digitalised. Overall, we find that the average time savings is 80 minutes per person per year for each of the 48,000 citizens. In total monetary terms, this corresponds to a personal finance gain of approx. DKK 5m.

3.3 Summary

Each year, libraries help approx. 48,000 citizens to improve their digital skills through digital training courses. This in turn accelerates and facilitates the transition towards a more digital society, resulting in easier and more effective communication between citizens and authorities.

Overall, we find that libraries generate value in the region of DKK 150-200m annually through their contribution to the digital revolution. This contribution is anchored in four effects: public savings from the transition to email, public savings from digital self-service, personal finance gains as a result of increased use of online banking and personal finance gains in the form of time savings associated with digital self-service.

We view this as a conservative estimate. In addition to offering courses, libraries also provide personal assistance to citizens and businesses. This points to a higher contribution from increased digitalisation.

4 Future contributions?

In the past chapters, we have quantified in monetary terms several specific and projected economic effects of the libraries. However, in connection with these analyses and calculations we identified several slightly unexpected effects which, while difficult to quantify, may nonetheless be significant.

4.1 Information architecture

In today's modern digital world offering vast quantities of information, several new business models have based their success on their ability to pinpoint extremely precise information. Such examples are Facebook, Amazon and Nemlig.com, which optimise customer deals using information about previous buying patterns. The value creation arising from information about consumer patterns based on large volumes of data is often referred to as 'Big Data'.

In this context, collection, structure and overview of all this information are key words and are in many ways the core competencies of librarians.

Box 3 Information structuring is becoming increasingly important

"Every two days now the human race creates as much information as we did from the dawn of civilisation until 2003. That's about five exobytes of data a day, for those of you keeping score. The challenge becomes, not finding that scarce plant growing in the desert, but finding a specific plant growing in a jungle. We are going to need help navigating that information to find the thing we actually need."

Eric Schmidt, former CEO of Google

Source: The Guardian (2013)

Librarians are highly skilled at structuring information, system design, building up databases and designing search engine functions. This is evidenced by the fact that private companies are keen to employ trained librarians to perform these types of tasks. See a list of examples on the next page. In fact, 27 per cent of librarians are employed by private sector enterprises; see Figure 19.

Figure 19 Distribution of employment for newly qualified librarians by sector



Source: University of Copenhagen, Data from graduate survey 2013 for the Royal School of Library and Information Science

Box 4 Private companies exploit the potential of librarians’ strong information architecture skills

Novo Nordisk	Herning Library/Infogate	Devoteam
<p>Among other things, Novo Nordisk has hired librarians to focus on ‘Competitive Information’, where by librarians work together with scientific analysts to stay abreast of and have easy access to information about competitors’ product development.</p>	<p>Based in Herning Municipality, Infogate is an autonomous unit that businesses can hire to help with information searching. The librarians generate value for businesses by exploiting one of their core competencies, namely a structured approach to information searching.</p>	<p>Devoteam supplies IT solutions to private businesses and public institutions, employing librarians to handle customers’ information management challenges.</p>
		
<p>The librarians use their expertise to ensure the highest quality and credibility vis-à-vis the information they gather about competitors’ development of new drugs and products. They also ensure that knowledge of competitors’ development of new drugs is structured and easy for scientific analysts to search in.</p>	<p>In this way, Infogate helps its customers to ensure high efficiency and quality in information procurement. Among other things, Infogate helps businesses seeking information about export markets as well as municipal administrations during the start-up phase of new projects.</p>	<p>These include information strategies, electronic case and document handling, records management, building up of databases with the right categories and implementation of search engine functions that ensure high information quality and access to the right material when required.</p>

Source: Interview with librarians employed in three organisations

Do these skills hold unexploited potential?

Traditionally, libraries have functioned as knowledge banks, giving citizens access to knowledge and culture, using these skills to physically structure information at the libraries. With the spread of the internet, libraries have also built up digital knowledge banks. The question is whether with the rapidly growing volumes of information there exists an unexploited potential in the new services that the libraries could offer citizens, businesses and public institutions? New services could take the form of information searches for municipal administrations and instruction for pupils and students in effective information searching.

There is already some evidence of this around the country, among other places at Gentofte, Fredensborg and Aarhus libraries, but this service can certainly be greatly improved and professionalised; see Box 5.

Box 5 Examples of lesson plans for pupils

Fredensborg Libraries – Media skills and information literacy on the timetable
 Fredensborg libraries are focusing on digital skills for lower secondary schools through a course of instruction enabling pupils to handle different digital platforms and media safely and appropriately. The project is a collaboration between all the municipality’s schools and public libraries and Skolen i Virkeligheden (the Real School). The development work is the result of close collaboration between public librarians and school librarians. A three-pronged, holistic approach has been developed – a lesson plan for the pupils, instruction of teachers and the preparation of teaching materials, which the teachers can use in their lessons with a view to information searching and source criticism. Pupils are taught by teachers, public librarians and school librarians.

The local libraries in Aarhus Municipality – Lesson and Learning Plan
 The project consists of four different lesson plans for classes. The first lesson plan is an introduction to information searching for 8th grade municipal primary and lower secondary school pupils. The pupils gain knowledge of the libraries’ databases and are introduced to different search techniques. Through practical hands-on lessons, the pupils find articles in different databases and are introduced to source criticism.

The second lesson plan is a library orientation course for 5th grade municipal primary and lower secondary school pupils. The libraries’ services are presented to pupils as a resource for use in connection with projects and leisure interests and as a social meeting place. The pupils are introduced to the library’s physical materials and website. They carry out assignments in the library. The lesson plan concludes with an introduction to the website Palles Gavebod and a book talk on recent youth books.

The third lesson plan is an introduction of the e-bookcase service to 6th grade primary and lower secondary school pupils. The pupils are introduced to the e-bookcase’s fiction and non-fiction titles, which can be borrowed and accessed directly on the pupil’s computer, tablet or smartphone. Once again, focus is on hands-on teaching to enable pupils to conduct their own searches in the e-bookcase.

The fourth lesson plan is aimed at the 2nd grade classes of municipal primary schools and offers tips and tricks for the first reading assignments. The pupils are introduced to the children’s library materials and the children’s library as a social meeting place. The pupils are shown the children’s library’s physical materials, the library’s classification system and quality children’s books.

Source: Fredensborg Libraries and the Local Libraries in Aarhus Municipality.

4.2 The next Skype

One of the common characteristics of the creators of some of the biggest IT business successes is, that as children, they inhabited a rich world of imagination where good ideas were rewarded and anything was possible. One of their sources of inspiration was books.

The characteristics of the library (openness, security, silence, helpful staff) create an oasis where children and adults can enter the worlds they find most interesting – taking home those worlds or giving them full expression while at the library.

As a space, the library is a positive, formative and nurturing influence. The setting is safe, the space neutral and inclusive, and people are on hand to help when needed. All the rooms have a specific visual identity, which affects the visitors – and the subject field is ‘knowledge and culture’. There is a common acceptance of the library’s role and an understanding of appropriate behaviour. The behaviour is reproducible – we know how to behave when we visit the library. There are quiet zones and people who immerse themselves. You are not the only one present and you must show respect for others, but you feel at home – even though it is free in monetary terms, it could ‘cost’ something in other ways. Overall, it means that the library – in addition to supplying books etc. – is a place that nurtures and educates.

The library is thus able to provide an oasis where the imagination and interests nurtured in childhood can be transformed into creativity and innovation in adulthood. The ability to immerse oneself and specialise in a given subject can be an important factor in developing major business successes of the future. That is certainly the story told by Malcolm Gladwell in his famous book ‘Outliers’. Here, the theory is that to become truly successful early in life we need to spend 10,000 hours mastering an area and that if you are fortunate, this area turns out to be one of the most important areas for economic development. The golden example used in Malcolm Gladwell’s book is Bill Gates, who spent much of his childhood and youth programming²⁰.

The idea is not to manage *unique talents*, but rather give them a space that offers a new perspective on life. This is precisely what libraries do by creating a physical space where ‘super geeks’ have room to develop their abilities. They do not become antisocial dropouts but rather super programmers who can invent the next Skype.

²⁰ Gladwell (2008)

Box 6 Information structuring is becoming increasingly important

“I was in China in 2007, at the first party-approved science fiction and fantasy convention in Chinese history. And at one point I took a top official aside and asked him why? SF had been disapproved of for a long time. What had changed?”

“It’s simple,” he told me. “The Chinese were brilliant at making things if other people brought them the plans. But they did not innovate and they did not invent. They did not imagine. So they sent a delegation to the US, to Apple, to Microsoft, to Google, and they asked the people there who were inventing the future about themselves. And they found that all of them had read science fiction when they were boys or girls.

Fiction can show you a different world. It can take you somewhere you’ve never been. Once you’ve visited other worlds, like those who ate fairy fruit, you can never be entirely content with the world that you grew up in. Discontent is a good thing: discontented people can modify and improve their worlds, leave them better, leave them different.”

Neil Gaiman, science fiction author

Source: Neil Gaiman, science fiction author

The general point is that libraries help to promote specialisation by providing a haven where the mind finds peace and thoughts can run free. For others it is a place where concentration peaks and new ideas are born.

While some will invent new solutions through the world of fiction, others will discover, develop and cultivate their interests. The library is an oasis that provides a peaceful setting in which to read. This form of peaceful surrounding can help promote creativity and innovation, which creates value on many levels. For the individual, the community and society at large. Through family enjoyment, theatre plays and engineering solutions that provide specific economic gains.

4.3 Summary

In this chapter, we have described several interesting effects and ways in which libraries generate value for society. These effects have not been attributed a value in themselves. However, we nonetheless find them sufficiently interesting to warrant their inclusion in the libraries’ ongoing efforts to develop their contribution to society. And although these effects have not been assigned a value, they are partially touched upon in chapter one under cultural and social effects, where part of citizens’ valuation is expressed precisely through the social contribution made by libraries.

Bibliography

- Aabø (2004) 'The Value of Public Libraries'
- Aabø, S., Audunson, R. & Vårheim, A. (2010) 'How do public libraries function as meeting places?'
- AE Rådet (2006) 'Økonomiske Tendenser 2006', rapport
- AKF (2007) 'Læsefærdigheder, Arbejdsmarked og Indkomst', working paper
- Audunson and Aabø (2013) 'Biblioteket som motor i å skape lokal samfunn med sammenhengskraft i en flerkulturell storbykon tekst'
- Bille Hansen (1996) 'Danskernes værdisætning af Det Kgl. Teater'
- Bille et al. (2004) 'Danskernes kultur- og fritidsaktiviteter 2004'
- Gladwell (2008) 'Outliers - The Story of Success'
- Goulding (2005) 'A community forum: UK public libraries as meeting places'
- Hoglund (1999) 'Bibliotekens Värde'
- Hvenegaard Rasmussen og Høirup (2000) 'Kulturinstitutionernes bidrag til det kulturelt mangfoldige Danmark: en undersøgelse af kunst- og kulturformidlingsinstitutioners tilbud til og inddragelse af de etniske minoriteter'
- Kerslake and Kinnel (1997) 'The social impact of public libraries: A literary review'
- Moos-Bjerre (2014) 'Fremtidens Biblioteker'
- Moos-Bjerre (2011) 'Danskernes holdning til bibliotekerne 2011'
- Moos-Bjerre for the Danish Think Tank Libraries of the Future (2014) 'Bibliotekernes uddannelseseffekt'
- Nagel Delica (2013) 'Biblioteker og social kapital'
- PISA (2009) 'Danske unge i en international sammenligning' Bind 1 - resultatrapport
- Ramböll (2010) 'Business Case, Digitalisering af offentlige breve og dokumenter'
- Reppen (1998) 'Bruk av folkebibliotek 1998'
- SFI (2014) 'Fra 15 til 27 år - PISA 2000-ELEVERNE I 2011/12', report
- The Guardian (2013) 'Neil Gaiman: Why our future depends on libraries, reading and daydreaming', article
- Trine Bille et al (2004) 'Danskernes kultur- og fritidsaktiviteter 2004 - med udviklingslinjer tilbage til 1964'
- Usherwood (2002) 'Demonstrating impact through qualitative research'

THE THE THE
NOMECONOMECONOMECONOM
VALUE VALUE VALUE
OF OF
PUBLIC PUBLIC PUBLIC
ARIESBRARIESBRARI

The Danish Think Tank Libraries of the Future
fosters knowledge and debate about the role of libraries in the
welfare and knowledge society of the future

www.fremtidensbiblioteker.dk